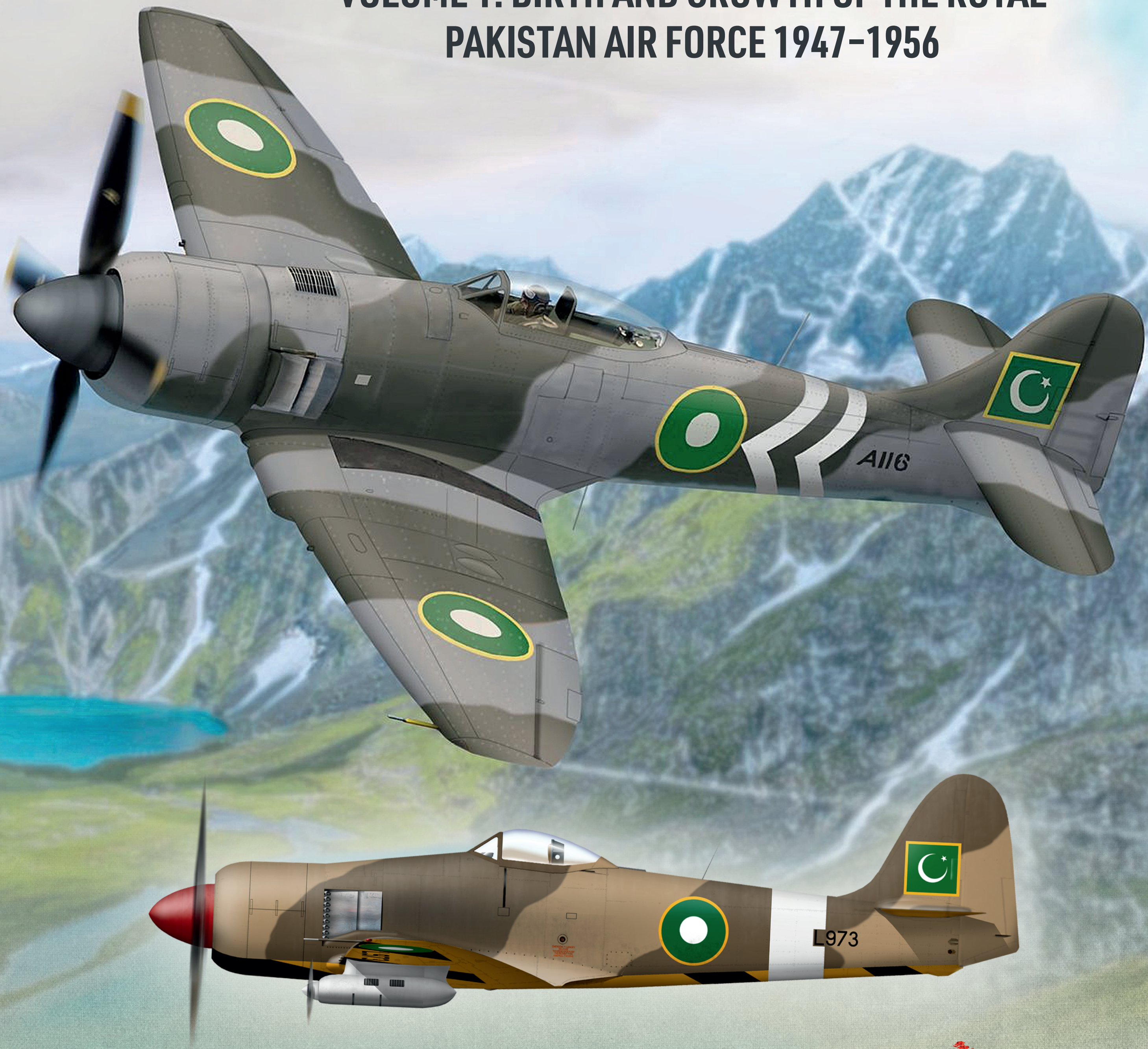
No.38

EAGLES OF DESTINY

VOLUME 1: BIRTH AND GROWTH OF THE ROYAL PAKISTAN AIR FORCE 1947–1956



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Front cover: One of 35 Tempest IIs of the Royal Pakistan Air Force as seen over the mountains and lakes of Pakistan-administered Kashmir, in 1949. (Artwork by Pablo Albornoz © Helion & Company 2022).
Cover profile: Another of the British-made, piston-engined fighter-bombers operated by the RPAF was the Fury FB.Mk 60. This example is illustrated as used for target-towing purposes, later during its career. (Artwork by Tom Cooper)

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We always welcome receiving book proposals from prospective authors.

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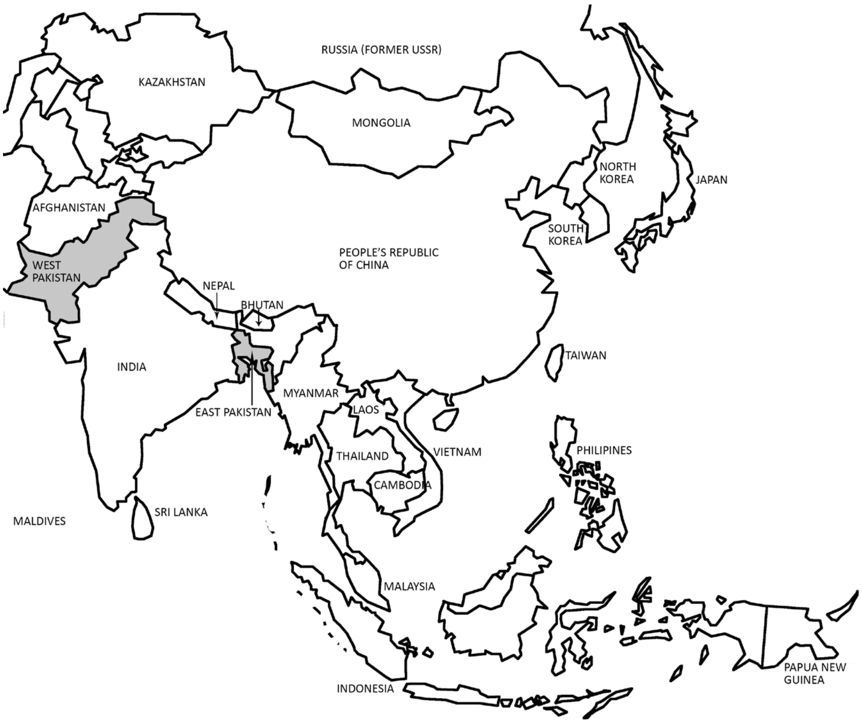
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Note: In order to simplify the use of this book, all names, locations and geographic designations are as provided in *The Times World Atlas*, or other traditionally accepted major sources of reference, as of the time of described events.

ABBREVIATIONS

ACM	Air Combat Manoeuvring
AFRC	Armed Forces Reconstitution Committee
AGL	Above Ground Level
AOP	Air Observation Post
ARD	Aircraft Repair Depot
AST	Air Service Training Ltd
BFMs	Basic Fighter Manoeuvres
C-in-C	Commander-in-Chief
CFS	Central Flying School
DACT	Dissimilar Air Combat Training
DCC	Defence Committee of the Cabinet
ERS	Engine Repair Section
ft	foot, feet
GB£	Great Britain Pound
GD	General Duties
GHQ	General Headquarters
GTS	Gas Turbine Section
HAL	Hindustan Aircraft Limited
HMG	Her Majesty's Government
hp	Horsepower
HQ	Headquarters
IAF	Indian Air Force
kts	Knots
lbs	Pound, Pounds
Mk	Mark
mph	Miles per hour
MU	Maintenance Unit
NCO	Non-Commission Officer
No.	Number
NWFP	North-Western Frontier Province
OC	Officer Commanding
OTU	Operational Training Unit
PAF	Pakistan Air Force
PLAAF	Peoples Liberation Army Air Force
PS&S	Provost and Security Services
RAF	Royal Air Force
RAFI	RAF in India
RFC	Royal Flying Corps
RIAF	Royal Indian Air Force
RN	Royal Navy
RPAF	Royal Pakistan Air Force
SATC	Shaheen Air Training Corps
SEAC	South East Asia Command
SNCO	Supply Non-Commission Officer
UK	United Kingdom
US, USA	United States, United States of America
USAF	United States Air Force
USAAF	United States Army Air Forces
VA	Vulnerable Area
VIP	Very Important Person

ACKNOWLEDGEMENTS

Research for this project is based on a variety of sources, including published material on the Pakistan Air Force (PAF), archival materials in Pakistan, the United Kingdom, and the United States and interviews or correspondence with PAF veterans.

The authors were also fortunate to come across recordings of a large number of interviews that Air Commodore M.Z. Masud conducted with veterans of PAF as part of his project on PAF history. This source proved invaluable. Air Commodore M.Z, Masud himself was one of the first pioneers of PAF, had a significant career in the service, and was part of its significant developments. Although these recordings were set up as interviews, in many cases, the interviews developed into a conversation between contemporaries where both the interviewer and the interviewee had excellent knowledge of the subject and were first-hand actors involved in the events being discussed. The qualitative assessments of the protagonists and perspectives obtained from listening to these recordings alone made this project an immensely valuable effort. Some interviews were with well-known PAF figures like former chiefs Air Marshals McDonald, Zafar Chaudry, Asghar Khan, and others with lesser-known officers who had held critical roles or made significant contributions over this period. These included Air Commodore P.D. Callaghan (who was intimately involved with PAF's efforts to address flight safety issues), Air Vice Marshal Haider Raza, who was RPAF's first Pakistani chief of staff, Air Commodore Syed Mansoor Shah (a pioneering transport pilot who later held important positions), and Air Vice Marshal A.I. Shaikh, a pioneering officer from the engineering branch. These recordings frequently switched between an interview format, a conversation, and between English and Urdu. When quoting from these, the authors have therefore paraphrased the interviews to make them intelligible to the reader.

The authors' correspondence and interviews with many PAF veterans brought to light aspects of PAF's developments that have previously not been in the public view. The experiences, assessments, and raw data provided by the veterans have been immensely helpful. We have no way to thank the officers who, based on the pages and pages of information they shared with us, must have spent many hours of their time responding to our questions. This was only to be followed by more questions and replies, and in some cases, these discussions spread over months and years. Air Commodore Sajad Haider and Air Chief Marshal Jamal A. Khan shared their thoughts until we completed our draft of the two volumes. While some like Air Commodore Mansoor Shah and Air Commodore Rais Rafi are no longer amongst us, our interaction with these officers undoubtedly explained several issues and questions.

No less important was the archival material that the authors could access, which allowed the inclusion of first-hand data on the PAF. We also found direct accounts of its first commander, doctrinal views of its early senior officers, and documents on various relevant issues.

Several aviation enthusiasts provided importation help and supported our efforts. Mr Kamal Butt has made a commendable effort in researching PAF's markings and aircraft serial numbers related to its early years, which he generously shared with us. Mr

Fahad Arshad Siddiqui, an avid aviation enthusiast with a vast collection of literature, was always at hand for help and advice. Franciszek Grabowski, a Polish researcher on PAF, has set up a page on Facebook on the Royal Pakistan Air Force, which was very helpful and allowed us to get in touch with families of several veterans and thus allowed access to unique information in some cases. Mr Murtaza Qasim has collected an impressive library of F-86 Sabre pictures, and Mr Zahid Husain shared pictures from his father's photo collection with us. The latter included pictures from early PAF years when his father, Air Commodore F.S. Husain as a fighter pilot, also catalogued the events through his camera. Mr Tom Cooper contributed the beautiful artwork in the volumes, and Jagan Pillarisetti was helpful with his work on the Royal Indian Air Force.

PREFACE

This is the first of two volumes that narrate the story of the birth and development of the Pakistan Air Force (PAF) over its first twenty-five years of existence.

The authors, as military aviation enthusiasts, have been researching the PAF and its history in a structured manner for almost two decades, a result of their lifelong interest and study of the subject. This book details the development of PAF as an air force and as an organisation, initially as the Royal Pakistan Air Force (RPAF), which will be the focus of Volume 1. In 1956 Pakistan declared itself a republic, and PAF dropped the Royal prefix. This period also coincided with a new era for PAF and will be the focus of Volume 2.

PAF's development as a force and as an organisation is a theme that has not been the focus of most earlier publications on PAF. These publications have more typically addressed specific conflicts, PAF's growth in terms of equipment, or particular episodes of PAF's history. In some cases, the history of PAF was told by veterans who primarily told their first-person stories. These are very helpful narrations, but they are not purposed to holistically explain the story of the organisation's development. These two volumes are an effort to provide a new perspective on the history of PAF and cover aspects that have not been discussed until now.

The two volumes explain how PAF, a token force on its creation on 15 August 1947 (with Pakistan having a status of a dominion, called the Royal Pakistan Air Force), transformed into a modern and effective air force within the first two decades of its existence. The basic argument is that no one factor, whether equipment, numbers, training, or leadership, explains PAF's success in the conflicts it faced. Instead, the critical point is that PAF came together as a well-knit organisation, addressing significant challenges it faced. The coming together as an organisation meant that its leadership understood the nature of airpower, and the rank and file of the force understood their specific roles and were trained and resourced to undertake those roles.

PAF was also successfully able to manage its acquisition and development goals and projects within budgetary and operational contexts. Further, the operational strategy was cognisant of how airpower can be utilised, the capability of the force, and the threat posed by its adversary. PAF realised quite early that it would have to fight outnumbered and that the sum of its parts would inevitably need to be more than the whole. Not all challenges were addressed; for example, in the 1965 war, the reliance on one major operating airbase created issues at the operational level. Military organisations take decades to mature, and PAF has been adept at learning its lessons throughout its history. PAF can therefore look at its history with pride.

The first volume will cover the airpower legacy inherited by Pakistan, the initial challenges faced by RPAF, steps taken to address them, and its early operations. This includes a comprehensive discussion of the beginning of RPAF, British influence and leadership, acquisitions during the initial years, doctrinal and organisational issues, and efforts to consolidate the air force. The authors end the volume with a review of the progress made and the remaining challenges. The second volume will cover the changes the US assistance program brought about under PAF's first Pakistani leadership. The second volume will also cover the two full-scale wars with India in 1965 and 1971. The author's focus on covering these wars has been to understand the conduct of air operations on a holistic basis and in the context of the war rather than reviewing individual episodes or providing the reader with a day-to-day chronological account. Specific episodes related to the two wars have been discussed in detail where they are relevant for our purpose and in cases where the authors could access a new account that was not available before.

Last but not least, history, more than the frequently quipped "lessons learned," is about building narratives internalised by the people, communities, and nations and therefore contributing to creating an identity. In this way, it is always and should be an evolving endeavour. In Pakistan, not enough work has been done on explaining the country's challenges and why specific responses were made. Work from the perspective of different constituents of the state's structure which make up the state's functional capacity, is even less. We hope the two volumes serve this purpose besides being the history of the country's military air arm.

1

THE GENESIS

The beginning and development of airpower in colonial India, the independence movement in India, and the creation of Pakistan are crucial to understanding the Pakistan Air Force (PAF) today and especially its early years as Royal Pakistan Air Force (RPAF). This volume will digress from its main story in the first few sections and briefly cover these developments. This volume is not meant to be an in-depth work on either of these subjects and will focus on themes, events, and places relevant to understanding our main topic.

The Advent of Airpower in colonial India

Aircraft arrived in British India just a few years after they flew in Europe. However, the advent of military air power in India remained a few years away. As the First World War broke out in Europe, a few Indians joined the Royal Flying Corps (RFC) as pilots and distinguished themselves in service. However, the colonial Indian Government was not convinced that native Indians could be commissioned in technical branches like artillery or the air force. Creation of India's air arm was therefore not yet on the cards, and the first proper advent of airpower in India initially came in the shape of RFC units for what nowadays is called the counter-insurgency role. The border area of India's North-Western Frontier Province (NWFP and now Khyber Pakhtunkhawa province in modern Pakistan), which bordered Afghanistan, were a perpetual security concern for British India. The border area had a difficult and mountainous terrain and was populated by tribes that considered themselves autonomous of any central authority and had strong martial traditions. The tribes had an adversarial relationship with the British Indian government, periodically resulting in armed conflict with the British Indian Army. In later years the possibility of the Soviet Union taking advantage of these conditions and using this as a possible route to advance toward India would add a new dimension to these security concerns.

With this security concern in mind, the Viceroy of India requested the British government to provide air support as an RFC detachment. Therefore, RFC's No. 31 Squadron with its 'A' Flight, including three B.E.2c aircraft, started operating from Risalpur in late 1916.[1] The detachment provided adequate air support in the shape of bombing, strafing, reconnaissance, and wireless ranging for artillery. The support provided was so effective that another RFC unit, 114 Squadron, was raised in Lahore in September 1917 from the aircraft provided by the now much enlarged 31 Squadron.[2]

While the First World War ended in November 1918, as part of the commitment to the defence of India, additional units from what was now the Royal Air Force (RAF) were progressively stationed in India. Eventually, RAF in India (RAFI) was given under the command of C-in-C India, with RAFI Headquarters established at Ambala in August 1920. The pressing air tasking for RAFI over these years remained air support of various kinds in cooperation with almost regular army expeditions and operations in the restless tribal areas and borders with Afghanistan. By the early 1920s, RAFI had grown to several squadrons, the 4th (Corp Recce) Wing at Ambala with Nos. 28 and 31 Squadrons flying Bristol F.2Bs for army cooperation. The 3rd (Bombing) Wing with Nos. 27 and 60 Squadrons at Peshawar with DH.9A and DH.10A bombers-transport while Nos. 5 and 20 Squadrons operating from Quetta and Bannu, flying Bristol F.2B aircraft. Besides, an Aircraft Depot and Park were established in Lahore and later at Drigh Road (Depot being situated at Drigh Road and the Aircraft Park at Lahore).

Irrespective of the valuable service provided by air power in these operations and the expansion of RAFI, the service did suffer neglect with a lack of adequate support leading to only seven of the 70 total aircraft being serviceable in August 1922.[3]

The Skeen Committee

At the same time, a separate political movement in India was taking place, which ultimately would change the course of history and interplay significantly with the main subject of this title. The political struggle by Indian citizens and political parties eventually led to independence and the creation of two separate countries. This political movement had several periods, actors, and consequences, but one of immediate relevance was the demand for a more significant share for Indians in national service, including military service.

Intense pressure from Indian politicians resulted in the formation of the Indian Sandhurst Committee, commonly known as the Skeen Committee (named after Lieutenant General Sir Andrew Skeen, who chaired the committee). The committee was formed due to a 1925 resolution passed by the Indian Legislative Council. The resolution demanded that a body be formed to investigate and recommend the establishment of military colleges in India to increase the participation of Indians in the military as officers. Among the committee's members were political stalwarts like Motilal Nehru (twice elected President of Indian National Congress) and Muhammad Ali Jinnah (later to be Pakistan's founding father). The committee eventually recommended several reforms, but one which ultimately led to the creation of the Indian Air Force was the recommendation that Indians be commissioned as officers in various technical arms like the Artillery, Signals, Air, etc.

Creation of the Indian Air Force

The recommendations of the Skeen Committee paved the way for Indian citizens to apply for possible selection as commissioned officers for air arms and gave a strong impetus to the possibility of the creation of the Indian Air Force in the future. In 1930 the first six Indian cadets were admitted to RAF Cranwell, England, to begin their training with eventual induction in the yet to be formed Indian Air Force. The idea of an independent air arm on the lines of RAF in India gained momentum though not without various hurdles, including a push back by senior officers in the RAF. Not everyone was convinced of the ability of Indian citizens to run an air force successfully, a prejudice perhaps reinforced by insecurities arising from the reduction in RAF strength post-First World War. However, the political need to create an independent air arm in India was pressing, and the idea and steps leading to this end were gaining momentum. Parallel efforts to locally recruit for training in technical trades like mechanics, aircraftsmen, wireless operators, electricians, etcetera were also initiated.

Ultimately the formal act leading to the creation of the Indian Air Force was the enactment of The Indian Air Force Act, 1932, by the Indian Legislature with the Governor-General providing his consent in April 1932.[4]

Air Commodore M.K. Janjua (left), in the years before partition, receiving Maharaja Umaid Singh at a forward airfield where the Maharaja reveals a paper clipping of actress Devika Rani hidden in his peaked cap. M.K. Janjua would be the senior-most RPAF officer at the birth of the country. (ACM I.H. Latif, K.S. Nair, Jagan Pillarisetti)

Several important decisions were taken at the time, including that RAF in India would take the lead in providing the Indian Air Force (IAF) with the required infrastructure. It was decided that a squadron would be raised as the minimum efficient unit and would be supported by an RAF squadron as a parent unit. It was also envisaged that the first IAF squadron was to be an army cooperation squadron to expose the new air force to various air operations.

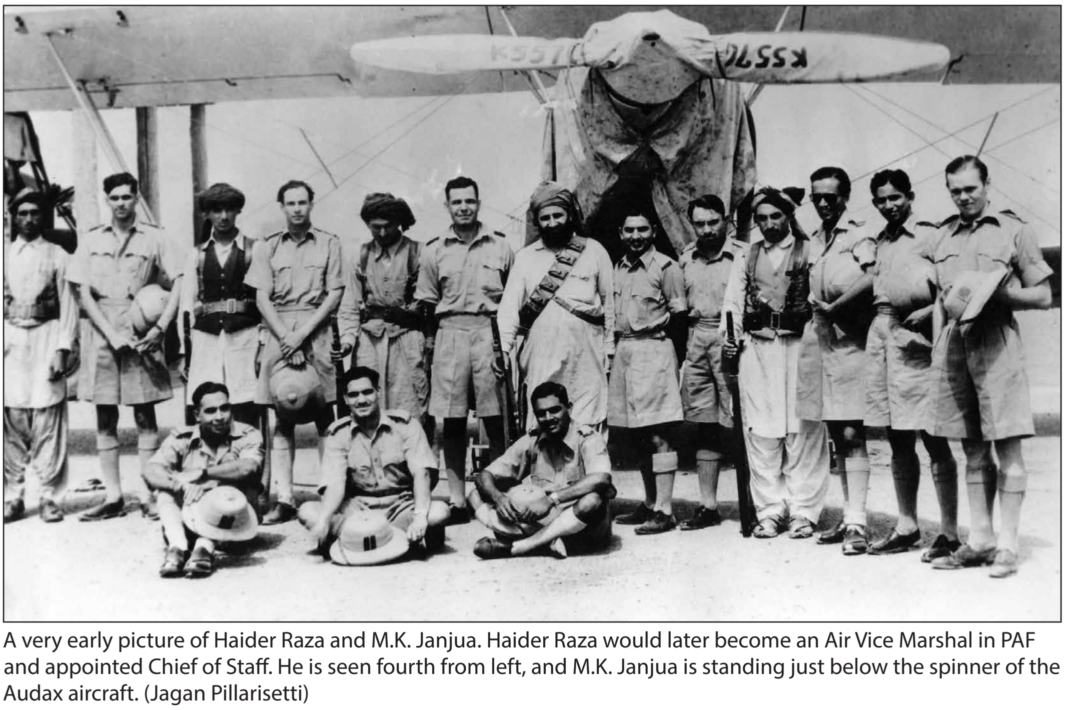
The Early Years

The 'A' Flight of No. 1 Squadron Indian Air Force was raised on 1 April 1933 and was equipped with four Westland Wapiti IIA aircraft. The Flight started training on the aircraft along with army cooperation with Indian Army units stationed in Karachi. An RAF officer and the Cranwell-graduated Indian pilots formed the nucleus of the yet not fully formed squadron. The Flight over the coming months continued to be strengthened by including pilots graduating from later courses at RAF Cranwell. The squadron concentrated on army cooperation flying, and participation in various exercises. The 'B' flight of No. 1 IAF Squadron was formed precisely three years later, in April 1937, the slow speed of the progress indicating that a fully formed IAF was not a priority for the powers concerned.

The 'A' Flight had its share of unfortunate incidents in the shape of air crashes. In one instance, during an army cooperation exercise, a low-flying Wapiti aircraft resulted in the death of some army soldiers. These incidents played up the prejudices held by some British officers about the ability of Indians to run an air force successfully. Soon after, a person no less than Air Officer Commanding RAF in India, Air Marshal Sir John Steel, addressed a parade of all IAF officers and airmen on 8 March 1934. His words were instructive: 'We knew fully well that Indians will not be able to fly and maintain military airplanes all you have done is to bring the greatest disgrace on yourselves … incapable of paying attention to detail, a most essential feature of military aviation. I therefore intend to disband the so-called Indian Air Force.'[5]

The belief that Indians would not prove equal to the task permeated various levels. 'A' Flight was moved to Peshawar and was kept busy with shuttling government officials from one place to another. Only in August 1937 (almost 4 years after its formation) was it deployed to the air strip at Miranshah for operations against the tribes bordering Afghanistan. The Miranshah airstrip was ideally located to support air operations in the tribal region and would later on be used by RPAF for the same purpose.

The experience of colonisation and the prejudices suffered would also colour Indian (and later Pakistani) attitudes towards the British, a theme which would sometimes play up negatively in later years. Most importantly, both Indians and later their Pakistani counterparts remained determined to fight these prejudices through professional excellence. That not all British officers held such views and that, on most occasions, the response of their local counterparts was mature meant that the fabric of the Indian Air Force as a military organisation remained intact. The 1937 deployment at Miranshah was, at last, a perfect opportunity for the nascent IAF to show that it could excel in its assigned task. Fortunately, this is what 'A' Flight ended



A very early picture of Haider Raza and M.K. Janjua. Haider Raza would later become an Air Vice Marshal in PAF and appointed Chief of Staff. He is seen fourth from left, and M.K. Janjua is standing just below the spinner of the Audax aircraft. (Jagan Pillarisetti) up doing and finished its deployment after numerous army air cooperation missions, including bombing and strafing, and emerged with its head held high. The following year also saw the raising of 'C' Flight of No. 1 Squadron, and all three flights transferred to Ambala, allowing the squadron to function as a whole.

Hence a few years after its raising and with war clouds in Europe beginning to appear, the Indian Air Force still stood at a single squadron that had just come to full strength.

Second World War

The rising possibility of war in Europe meant that the RAF's attention would focus more on the home front than on supporting the expansion of the IAF. While the need to shore up Indian defences was felt, any real impetus to enhance IAF's capability would come later when the war had spread to Asia and was closer to India. The first step taken to expand air capability in India in response to the world war was the creation of the IAF Volunteer Reserve, which recruited Indians with civil flying experience and correspondingly created Coastal Defence Flights (CDFs). These CDFs were to be deployed along eastern and western sea fronts substituting RAF units to patrol India's vast coastlines. For IAF, the North-West Frontier areas remained the primary concern, with operations against tribesmen continuing during 1940–41 as the war raged in the rest of the world. Expansion of IAF continued at a relatively mediocre pace, with No. 2 and No. 3 IAF squadrons raised during 1941. In the meantime, IAF also started re-equipping with Lysander aircraft replacing earlier Wapitis.

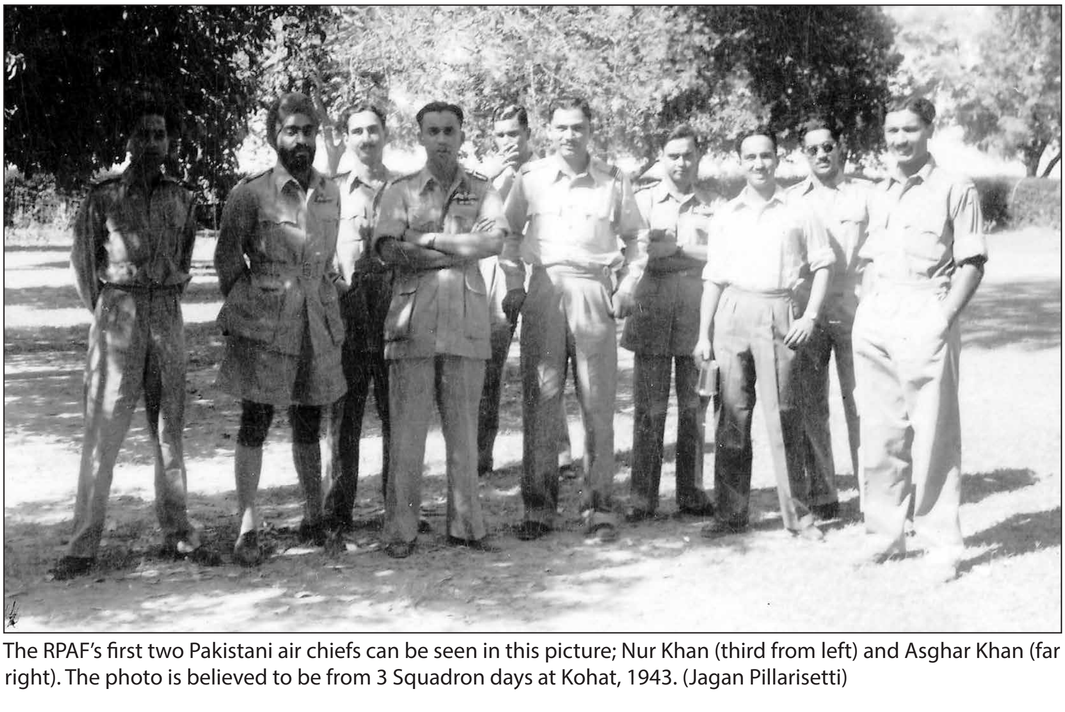
The first active participation by IAF in the Second World War came with No. 1 Squadron being deployed to Burma against Japanese forces in early 1942. Very soon, the IAF showed its mettle in Burma by using typical Indian inventiveness and raw courage. The Lysander aircraft of No. 1 Squadron were improvised to carry two 250lb bombs. On 2 February 1942, the squadron commander Jumbo Majumdar flew a mission to bomb the Japanese aerodrome at Mae Haungsaun. The next day all 12 aircraft of No. 1 IAF Squadron, along with two Lysanders of No. 28 RAF and two Buffalo aircraft of 67 Squadron as fighter escorts, again bombed Mae Haungsaun aerodrome.[6] Besides such inspired operations in an improvised light bomber role, the lone IAF squadron flew army support operations like strafing and reconnaissance. Nevertheless, by the time IAF had landed in Burma, the campaign had turned in favour of Japanese forces, and there was little difference a single not-so-well-equipped IAF squadron could make. Soon afterward, orders were received to prepare for withdrawal from the theatre, and by May 1942, Burma had fallen to Japanese forces.

The genuine threat posed by Japanese forces to India provided the much-needed impetus to the air defence of India. The result was a significant expansion of the presence of the RAF in India and more seriousness in the efforts to expand IAF. The RAF in India in 1942 was finally envisaged as a well-balanced force. It was now to be tasked not only for air defence of India but was also to gain offensive and reconnaissance capability to undertake a fuller range of airpower roles. The result was a much larger infrastructure of airfields and maintenance facilities that could support a more significant force sufficient to provide credible airpower capability for the defence of a continental-sized India. The RAF in India grew to several dozen squadrons by June 1943 and constructed a staggering couple of hundred airfields by November 1943. Maintenance infrastructure was enhanced by setting up additional supply and maintenance depots, and several dozen radar stations now dotted India in anticipation of thwarting an aerial threat.

For the Indian Air Force, plans of expansion to 10 squadrons were now on the table. Successful implementation of these expansion plans required sufficient manpower, related training, recruitment, aircraft supply, and other infrastructure. These plans agreed in 1941 called for a 10-squadron-strong IAF and targeted the end of 1943 as the completion date. By the end of 1943, nine squadrons and one anti-aircraft cooperation unit were raised, albeit by heavy borrowing of personnel from the RAF, as recruitment and training of sufficient personnel in a short time was difficult.

Significant efforts were now underway to create a somewhat credible local air arm in India. These efforts saw the setting up of structured training facilities for pilots and technical trades and increased personnel recruitment targets. The improvised Initial Flying Training School set up at Risalpur in 1939 was replaced by an Initial Training Wing at Lahore, two Elementary Flying Training Schools, and Service Flying Training School at Ambala. Combined, these schools provided about 40 weeks of training to prospective pilots before they were posted to operational squadrons as General Duty Pilots. The elementary flying was conducted on de Havilland Tiger Moths, and the Service Flying Training phase used Harvard aircraft.

Initially, an Armament Training Unit was established at Peshawar and later replaced by the Operational Training Unit (OTU) at Risalpur for both RAF and IAF pilots. Ultimately No. 151 OTU started conversion courses on Hawker Hurricane II fighters and No. 152 OTU on Vultee Vengeance II dive bombers. These aircraft were now replacing earlier IAF types, and both platforms



The RPAF's first two Pakistani air chiefs can be seen in this picture; Nur Khan (third from left) and Asghar Khan (far right). The photo is believed to be from 3 Squadron days at Kohat, 1943. (Jagan Pillarisetti) would become IAF's mainstay in the following months. Training of technical manpower expanded alongside the expansion of IAF, and several training schools for technicians across India were set up. Along with the growth of different branches like radars, signals, and meteorological and air traffic control services came an expansion of Air Headquarters to manage other branches, and functions like administration, personnel, and accounts were added.

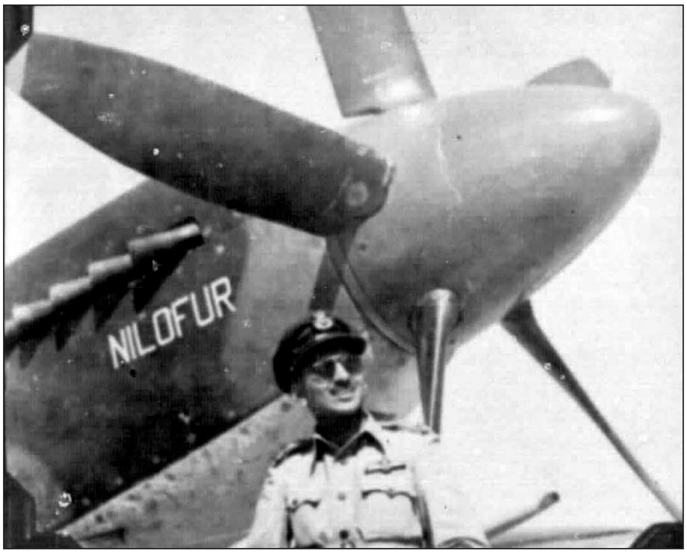
South East Asia Command (SEAC) was set up in India under a Supreme Allied Commander, South East Asia, responsible for all services, including Air Command South East Asia. The latter included all RAF, IAF, US, and Allied air units under one air command. By November 1943, these included 48 RAF and IAF squadrons and 18 US Army Air Forces (USAAF) squadrons. In the first phase of the new campaign against the Japanese forces, IAF's No. 6 Squadron, flying Hurricane IIB aircraft, was deployed in a fighter reconnaissance role and was followed shortly by No. 8 Squadron with its Vultee Vengeance aircraft in the dive bomber role and then by No. 4 Squadron with Hurricane IICs. These squadrons were mainly tasked to support the Allied ground forces in their offensive against the Japanese in close support and reconnaissance roles.

Over the following months, more significant numbers of modern Allied aircraft like Spitfires for RAF and P-51 Mustangs and P-38 Lightnings for USAAF were inducted into the theatre. The modernisation and growing Allied numbers ensured the gradual establishment of air superiority for the Allied forces. Almost all IAF squadrons were deployed at various times in the South East Asia theatre, while some squadrons continued with on and off operations in north-western India against the hostile tribes.

Individual IAF squadrons performed well in the theatre, and the force was also recognised for its services, awarded the "Royal" prefix on 12 March 1945. However, the overall contribution to the war effort was relatively small. IAF's total strength of 10 squadrons was dwarfed by the total strength of Allied air assets in the theatre, and neither were the IAF squadrons ever equipped with front-line aircraft types of the time. It was only towards the end of 1944 that the first IAF squadron was reequipped with Spitfire Mk VIIIs (itself, not the most advanced variant then), followed by other IAF squadrons converting to the type in 1945. Towards the end, Indians only made up 11 percent of the officers and 18 percent of the airmen of Allied air forces in India. IAF's operational experience remained essentially support to land forces with Hurricanes and Vengeance dive bombers. RIAF was now combat experienced but not with the full spectrum of air operations and neither had it gained knowledge of planning and running an air campaign independently.

Post-Second World War

After the Japanese surrender, IAF was included in the Commonwealth Occupation Forces in Japan, and No. 4 IAF Squadron became the first IAF unit to convert to Spitfire Mk XIVs. Gradual re-equipment of IAF continued in the post-war period as the RAF demobilised after the war and airframes became available. No. 9 Squadron (later to become part of RPAF) also converted to Spitfire Mk XIVs and was transferred to Peshawar by March 1946.[7] This conversion to more advanced Spitfire variants seems to be an ad hoc step given the availability of a large number of surplus RAF aircraft post-war. At the same time, a decision to reequip RIAF with Hawker Tempest II aircraft was made with No. 5 Squadron RAF ferrying aircraft to India in autumn 1946. No. 3 Squadron of RIAF became the first squadron to convert to the new type.[8]



Zafar Chaudry is standing in front of a Spitfire Mk XIV. He had named this aircraft Niloufur after a young Iranian princess of those days. (Air Marshal Zafar Chaudry via Kamal Butt)

The overall state and plans for RIAF post the Second World War are best described in the address made by Field Marshal Sir Claude Auchinleck, Commander-in-Chief India, at Staff College Quetta:

> As to the Royal Indian Force, that too (like the Army and Royal Indian Navy) had expanded very rapidly in the war years, too rapidly to allow it being built up as it should have been, had conditions permitted, into a balanced and self-contained Force. There was a natural and very proper desire to see Indian squadrons taking place in the battle against the enemy, with the result that, when fighting ceased, we found ourselves with ten RIAF squadrons, all being fighter squadrons and practically all being officered and manned by Indians. We all know how well these squadrons fought in Burma.
>
> Behind these squadrons, however, the RIAF had no maintenance organization of its own. There was, and still is a vast repair and maintenance organization for the upkeep of the Air Force in India, but this is a mixed RAF and RIAF organization and depends very largely indeed on the RAF for a large number of skilled technicians and artificers required, though intense efforts were and are being made to train Indians to fill these essential posts.
>
> What we now have to do is first, to provide the RIAF with the necessary Indian repair and maintenance units, so as to make it independent of the RAF and fully self-contained and self-supporting national force. We are therefore not going to rush ahead and form more RIAF squadrons immediately, as this would be a short-sighted and ill-balanced policy. Quite out of keeping with our object. We propose to make the existing ten squadrons into a balanced force of fighter, bomber, and transport aircraft, so that our Indian airmen may become experts in flying multi-engine aircraft as well as flying single-engine fighters, and so that our Indian squadrons may have their own administrative backing behind them.
>
> This will take two or three years at least. When this first stage is complete, we propose to increase the number of squadrons in the RIAF until it can take over the sole responsibility for the local defence of India. Our present plans allow for an Air Force of some twenty squadrons of all types, fighters, bombers, transport aircraft, and others so that RIAF will have to expand to double its present strength. Our intentions is that this expansion in actual

> squadrons shall be accompanied by the simultaneous building of the necessary training, repair, and maintenance establishments on an entirely Indian basis.

Pakistan's Birth

The twentieth century would also see major political movements in British colonies with the ultimate aim of dismantling colonial rule and the emergence of these colonies as independent nation-states. British India (which was referred to as the 'jewel in the crown') saw one of the most significant anti-colonial movements which ultimately led to the birth of two independent countries – India and Pakistan in August 1947.

Two major political parties played a vital role in the movement, the All India Congress and the All India Muslim League. The latter of the two political parties was set up in 1906 to represent the interests of the Muslim community in India.

As the possibility of British colonial rule ending in India grew, the Muslim League would articulate concerns for the Muslim community's political rights in an independent India where Muslims would be a minority. The demand for an independent nation – Pakistan – separate from India evolved from these concerns and was realised when efforts at a power-sharing arrangement within a united India failed. The last of these was the so-called Cabinet Mission Plan which would have seen a united India, including Muslim majority areas now forming Pakistan. Under this arrangement, the constituent parts of India would be ruled by one centre but would have a high degree of local autonomy, thus ensuring the political rights of minorities within India.

This Cabinet Mission Plan proposed in May 1946 was the last real possibility of a united India post-British colonial rule. The Muslim League accepted it under Muhammad Ali Jinnah (considered the founding father of modern Pakistan). However, by this time, the All India Congress saw the ascendency of the right of centre politicians and favoured a centrist political setup for an independent India. The proposed political solution, envisaging a loose federation, was rejected by Congress, which now primarily represented the Hindu majority. The rejection of this plan sounded the death knell for the possibility of a united India and led to the partition.

This development set the ball rolling for the final partition into the two independent countries of Pakistan and India. Pakistan would consist of two wings; West Pakistan was made up of north-western regions of India, constituting the contagious regions which were Muslim majority, while East Bengal would form East Pakistan.

For Muhammad Ali Jinnah, the principle on which the new country would be formed was clear and was articulated in his speech to Pakistan's constituent assembly on 11 August 1947:

> I cannot emphasize it too much. We should begin to work in that spirit, and in course of time all these angularities of the majority and minority communities, the Hindu community and the Muslim community – because even as regards Muslims you have Pathans, Punjabis, Shias, Sunnis and so on, and among the Hindus, you have Brahmins, Vaishnavas, Khatris, also Bengalees, Madrasis and so on – will vanish. Indeed if you ask me, this has been the biggest hindrance in the way of India to attain the freedom and independence, and but for this, we would have been free people long long ago. No power can hold another nation, and especially a nation of 400 million souls, in subjection; nobody could have conquered you, and even if it had happened, nobody could have continued its hold on you for any length of time, but for this. Therefore, we must learn a lesson from this. You are free; you are free to go to your temples, you are free to go to your mosques or to any other place or worship in this State of Pakistan. You may belong to any religion or caste or creed – that has nothing to do with the business of the State.

The die was now cast for Pakistan's creation, envisaged as a modern and democratic state. The resulting partition would see the division of India on the basis of communal grounds. The partition would see large migration of Muslims from Muslim minority areas to Pakistan and migration of Hindus and Sikhs from areas forming Pakistan to India.

2

THE BIRTH

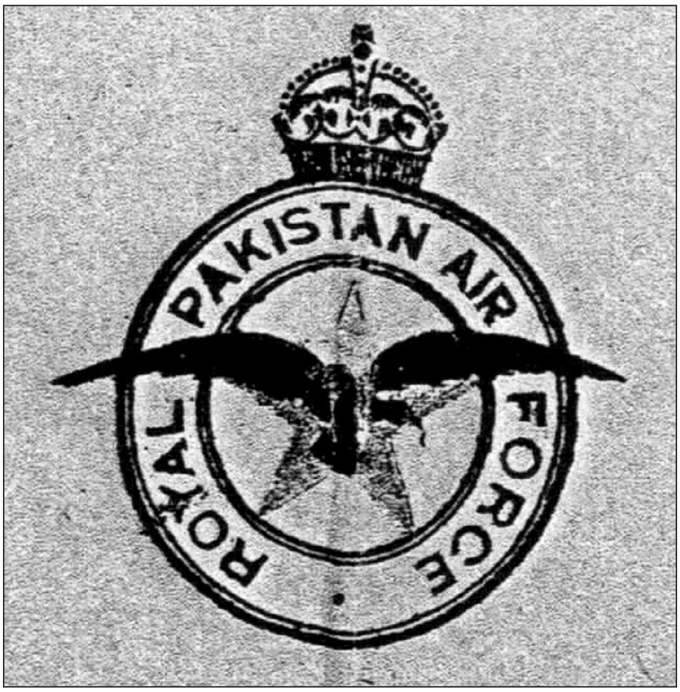
The independence of British India and its partition into two Dominions of India and Pakistan was brought about under the Indian Independence Act, 1947, an act of the British Parliament that received the King's assent on 18 July 1947.[1] The legislation was drafted by the Labour government of Prime Minister Clement Attlee and was based on the Mountbatten Plan, also called the 3rd June Plan.

Within the Indian Independence Act, Section 11 envisaged the division of the Indian armed forces between the two Dominions as follows: 'The orders to be made by the Governor-General under the preceding provisions of this Act shall make provision for the division of the Indian armed forces of His Majesty between the new Dominions, and for the command and governance of those forces until the division is completed.'[2]

Consequently, an Armed Forces Reconstitution Committee (AFRC) was set up under the chairmanship of Field Marshal Claude Auchinleck, Commander-in-Chief, India. The AFRC was to, in close consultation with the Steering Committee acting under the orders of the Partition Council, make proposals for the division of the existing Armed Forces of India, namely, the Royal Indian Navy, the Indian Army, and the Royal Indian Air Force (including the various installations, establishments, equipment and inventory owned by the then Defence Department of the Government of India). For the successful division of the Armed Forces, the services of British officers, then serving in the Indian armed forces, were considered essential. It was unrealistic to expect that the armed forces would be nationalised entirely in terms of requisite experienced personnel in the few weeks leading to independence.

The work of the AFRC was based on the principle that to manage the complication of dividing the armed forces into two; both armed forces will remain under one administrative control of the Supreme Headquarters for an interim period (Field Marshal Auchinleck was appointed Supreme Commander, India, and Pakistan on 15 August 1947, for this purpose). However, it was essential that on the date of independence, the two new countries had operational control over the respective armed forces; their forces to be predominantly composed of non-Muslims and Muslims respectively and, as soon as possible, constituted primarily on a territorial basis.

The first stage of the division would be more or less on a communal basis; plans would be made for the immediate movement to Pakistan of all Muslim majority units outside that area. Similarly, movement to India of all exclusively non-Muslim or non-Muslim majority units was to be arranged. Subject to certain restrictions, personnel serving in the united armed forces were entitled to elect which country they would choose to serve in. It was necessary that if the two countries were to have operational control over their respective armed forces by 15 August, they must have commanders for the three services, along with respective headquarters staffs through which to exercise their functions.


An early RPAF crest, the shape of the eagle would change over the years; however, it would still be shown looking right and rising with claws extended out. (Kamal Butt)

The birth of the Royal Pakistan Air Force

In the months leading up to the independence and creation of Pakistan in August 1947, national politics bearing on the future of post-colonial India were at the centre stage. Though the political landscape after independence was not certain, a large part of the Muslim population considered the creation of Pakistan very likely and desirable.

As a result, some of the Muslim officers of RIAF and other services started putting thoughts together on what the new country's armed services should look like. In the RIAF, the senior-most Muslim officer was Wing Commander M.K. Janjua (commissioned in RIAF in September 1938), who at that time was posted in the personnel department at RIAF Air Headquarters. Alongside Wing Commander Janjua, some other Muslim officers started to plan for a future air force for Pakistan which included gathering various records and information that would be helpful for an independent air force. Among these and in no degree less important were steps that would help forge an identity of the new air force like the design of its flag, crest, and selection of an apt verse from national poet Muhammad Iqbal's poetry as its motto: 'Sehra ast kay darya ast, tehe bal-o-par ma ast' (Desert and seas, all beneath your wings).

Besides the crest, a decision was also made that RPAF aircraft would carry national markings of green and white roundels and fin flash made of the green portion of Pakistan's flag with the crescent and star in white. Yellow or white boundary lines could be added to the roundels and fin flash; a practice that was common during the initial years. This decision was put to use quickly on Pakistan's independence day.

Wing Commander Janjua also reached out to influential political leaders of the All India Muslim League to build up relationships with potential future leaders of the new country and get political guidance on what the government or political leadership would have in mind for its military services. At the time, the political leadership seemed more concerned with immediate events and had given little thought to details of a new country.[3]

Air Commodore M.M. Piracha takes this story further:

> I was posted to Air Headquarters in January 1947 as a Flight Lieutenant, and the possibility of an independent Pakistan was clear then. My assignment was in the personnel branch, and my office was close to Wing Commander Janjua's office, and it was the first time I met him. With him, we regularly met Muslim League political leaders and discussed what needed to be done for an independent Air Force. My assignment gave me access to confidential records of all officers, and as to which officers were opting for Pakistan, I started segregating the personnel records of these officers. When the partition happened, I ensured that these records were sent to Pakistan so that the new air force would have the necessary information to organize its personnel. I also collected confidential records of Indian Air Force officers as they could be useful for the Air Intelligence branch of RPAF in the future. As I was not married, I volunteered to continue serving in Delhi as a liaison officer of RPAF. In October 1947, I got a message from Wing Commander Janjua to report to Air Headquarters RPAF at Peshawar in Pakistan as my need was felt to help organize RPAF. The period between August 1947 and October was a mixed one. One day when I returned to my residential room, I saw a mark on the door, which was ominous given the environment of communal riots at the time. Given my career, to date, had been with the RAF, I had good relationships at the Air Headquarters and was able to coordinate with RAF colleagues to perform my job. This also allowed me to help the families of several officers and men migrating to Pakistan as I managed to arrange air transport for some from Palam to Pakistan. In October 1947, I reported to RPAF Air Headquarters as P2 in the personnel branch at the rank of a Squadron Leader. I started setting up the necessary policies for career planning, postings, promotions, etc. My previous position allowed me access to personnel records before independence, so RPAF was perhaps the only organization in Pakistan with the full personnel record at the start.[4]

Air Marshal Zafar Chaudry's words also provide a flavour of those times:

> Until a couple of months before partition, there was hardly any animosity between officers opting for RPAF or RIAF. Except for perhaps a minor incident or so. Soon after the announcement of partition, tensions started on account of communal rioting. Initially, it was decided that those who had opted for Pakistan would stay put in India till things were organized in Pakistan. Later, things started heating up, and several incidents took place. More outside than in the services, so the general environment

became hostile, and the decision was made to move people, especially after August 47.

In June 1947, Air Vice Marshal Allan Lancelot Addison Perry-Keene, Air Officer Commanding Administration of Air Forces in united India, was appointed chair of the Air Force subcommittee of the AFRC. The AFRC worked under the chairmanship of Field Marshal Sir Claude Auchinleck, who was responsible for planning the division of India's Armed Forces between the new Dominions of India and Pakistan. The interests of future RPAF were watched by Wing Commander M.K. Janjua and Squadron Leader Asghar Khan (later to become the first Pakistani C-in-C). Other members included Air Commodore G.W. Birkinshaw (RAF) and Air Commodore Subroto Mukerjee, and Group Captain A.M. Engineer to represent the future RIAF. At the same time, Wing Commander Arjan Singh and Flight Lieutenant H.U. Bhatty acted as secretaries. Later on, Mr Mumtaz Mirza and Mr Jayashankar were added as advisors.

The Air Force subcommittee was given the following directions:

1. The air forces of India and Pakistan were to be created by 15 August 1947, and the initial order of battle was to be determined by the availability of manpower.
2. The Air Headquarters of the two countries were to assume responsibility for operations, training of units, and future planning for the respective air forces on 15 August 1947.
3. Administration in respect of personnel, organization, works, movement, technical maintenance, equipment, medical, accounts, catering, and statistics of both air forces would be controlled by Air HQ Supreme, Delhi through respective Air HQ India and Air HQ Pakistan until the responsibility could be assumed by the two air forces independently. The responsibility may be devolved subject by subject.
4. HQ No. 1 (India) Air Group at Peshawar to be reconstituted as Air HQ RPAF on 15 August 1947.
5. A new Air HQ to be constituted at Delhi for the Indian Union and to be functional as such on 15 August 1947.
6. The existing No. 2 (Indian) Group HQ is to be retained for control over training and miscellaneous units in the Indian Union under Air HQ India.

Since the RAF and RIAF in India had never been set up in a way which envisaged the partition of the sub-continent into separate countries, various maintenance and support units were spread across the two countries. For the viable running of the air forces, the two countries, therefore, needed to have a cooperation arrangement. It was decided that Pakistan would continue to service both Tempest and Centaurus engines for India. At the same time, it would arrange with Hindustan Aeronautics Limited (HAL) to service Dakota aircraft and Pratt and Whitney engines. Within this context, the division of assets between the two air forces was taking place based on:

1. On August 15, the RIAF stations in the respective territories of the two countries would be transferred to RIAF and RPAF along with station equipment.
2. Personnel would be required to opt for one of the two countries.
3. The 10 RIAF squadrons would be divided among the two air forces based on an agreed ratio considering the operational need and personnel opting for the force.
4. It was expected that up to August 1948, the training and maintenance units in respective units were to serve both air forces under the control of Supreme Headquarters at Delhi.
5. RAF personnel serving in India would be invited to volunteer for either RIAF or RPAF and remain under Supreme Headquarters' control for personnel matters.

Pakistan was to inherit the troublesome North-Western Frontier border and was the likely theatre for any projected offensive from the Soviet Union that had preoccupied British India. On this basis, Pakistan's operational requirement was a minimum of five squadrons consisting of four fighter squadrons and one transport squadron. The AFRC had also requested the subcommittee to recommend an order of battle after considering operational and training requirements and manning resources. The subcommittee deliberations could not reach a consensus as the Indian side opposed the proposed allocation to Pakistan. Muslims accounted for 20 percent of the RIAF manpower, and the argument was made that given the armed forces are being divided on a communal basis, the share of future RPAF in the assets should also be the same.

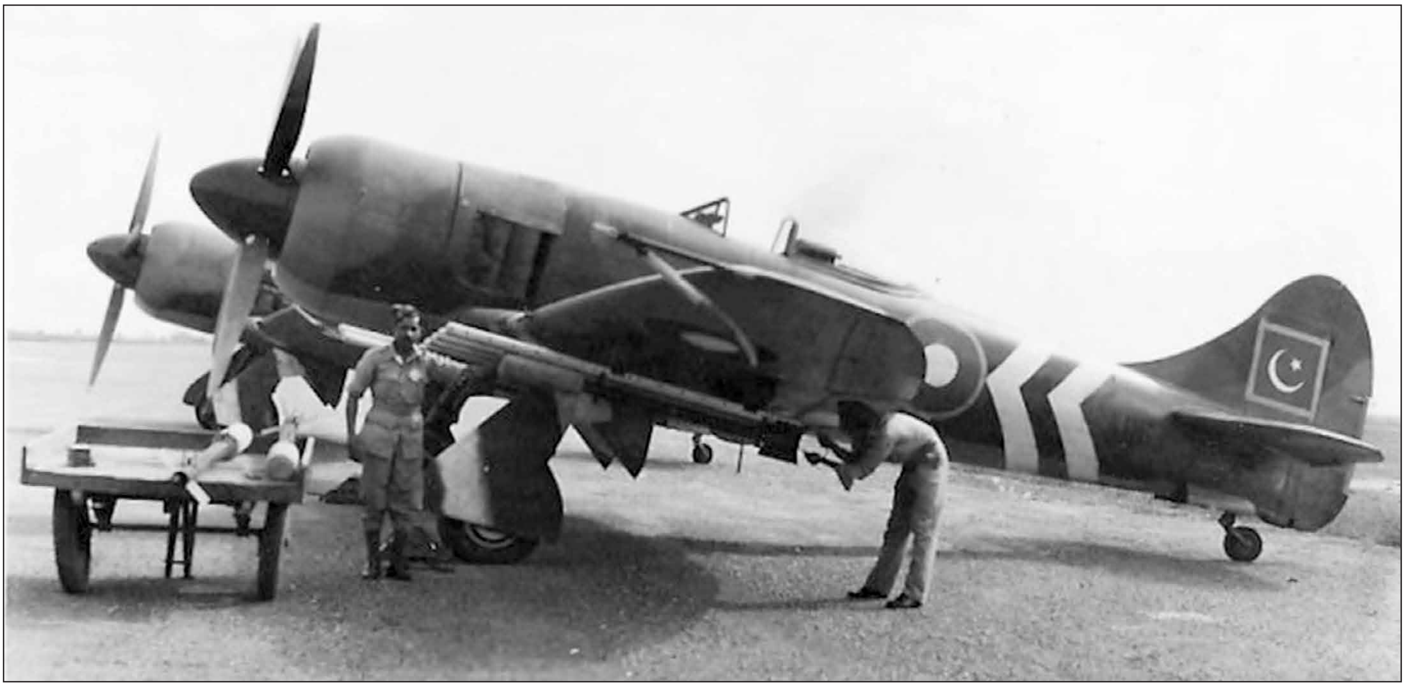
Given that RIAF was 10 squadrons strong, Pakistan should get two squadrons. There was no objection to whether both squadrons were to be fighter squadrons or one fighter and one transport squadron. The subcommittee's recommendations with the dissenting note of future RIAF officers were sent to the Partition Council. It was ultimately decided that RPAF would be allocated three squadrons, including two fighter squadrons and one transport squadron. While the exact reasoning behind this final allocation is unknown, the decision probably worked out as a compromise between the opposing positions. In terms of aircraft, the distribution to RPAF was as shown in Table 1.

Table 1: Number of aircraft allocated to the RPAF, 1947[5]

Aircraft	RIAF (undivided)	RIAF allocation post-independence	RPAF allocations
Dakota	78	46	32
Tempest II	158	123	35
Harvard	118	89	29
Tiger Moth	78	62	16
Auster V	8	5	3
Auster VI	20	13	7
Total	460	338	122

By the time the subcommittee completed its main recommendations, Air Vice Marshal Perry-Keene was informed that he was to be the first air commander (term used initially for what was later to become the office of commander-in-chief) of the future RPAF. Given that he was no longer in a neutral position, Air Vice Marshal Perry-Keene asked to be relieved of his duties as the chair of the subcommittee and handed over to Group Captain D.H.F. Barnett. Interestingly, Air Vice Marshal Perry-Keene was initially informed that he would be the Royal Indian Air Force commander. This position was later given to Air Marshal Thomas W. Elmhirst.

The three units allocated to the new air force included RIAF's No. 1 Squadron (The Tigers), at the time the squadron was stationed at



A very early picture of a Tempest II with RPAF markings and two white chevrons visible on the aft fuselage. The aircraft is still in the RAF-type green and grey camouflage. (Syed Masood Ahmad's collection)

An RPAF Tiger Moth. (Kamal Butt)

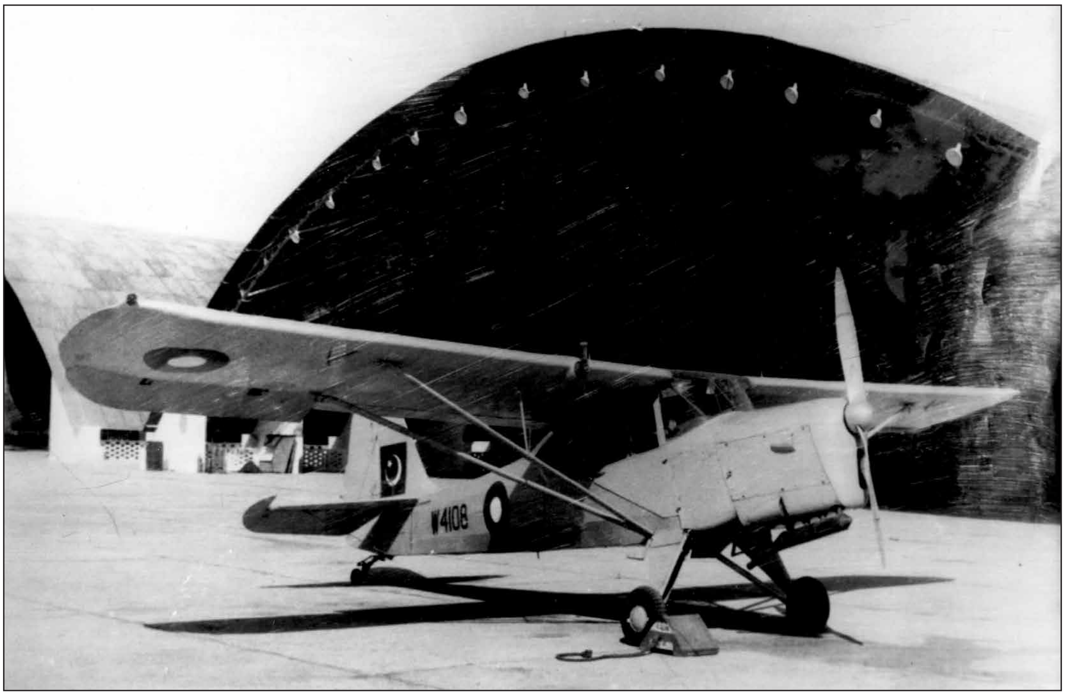
Peshawar and had converted to Tempest II aircraft in May 1947.[6] The unit stood down on the night of August 14–15; RPAF did not keep the RIAF legacy squadron number and raised it as No. 5 Squadron (Falcons) on 15 August 1947, with Squadron Leader Zahir Ahmad as Officer Commanding.

Besides the No. 1 Squadron, the second fighter squadron allocated to Pakistan was RIAF's No. 9 Squadron which was formed initially at Risalpur on 13 November 1943 and at the time of the partition was based at Peshawar. Squadron Leader M. Asghar Khan who had earlier commanded the unit and was a member of the Air Force subcommittee of the Armed Forces Reconstitution Board, is said to have insisted on this allocation. The squadron had also converted to Tempest II aircraft starting May 1947 and was reformed as No. 9 Squadron RPAF on 15 August 1947 with Squadron Leader M. Ibrahim Khan as Officer Commanding.

RPAF's first transport squadron was No. 6 Squadron RIAF which had started the conversion to Dakotas before August 1947 and stood up as an RPAF squadron under the command of Squadron Leader Salahuddin. The squadron was the weakest of the three RPAF units, with only one aircraft, three partially trained pilots, and limited other crew to support the transport squadron.

On 15 August 1947, the Royal Pakistan Air Force stood up with the establishment of stations (later called bases), units, and other assets as shown in Table 2 (see next page).

HQ 1 (India) Group at Peshawar stood down on the night of August 14–15 and was replaced by Air Headquarters, Royal Pakistan Air Force, on 15 August 1947. On the same day, the newly formed RPAF staged a flypast of Tempest and Dakota aircraft where the new country's founding father, Mohammad Ali Jinnah, took the salute. Participants of the flypast included Squadron Leader Zahir Ahmad, OC 5 Squadron. He flew a Tempest II aircraft with tail number PR653 on the momentous day, while a day before, the Squadron Leader had flown the same aircraft to practice for the flypast.[7] Two other Tempest IIs participating in the flypast include aircraft with tail numbers PR713 and MW419. All three aircraft retained



An Auster aircraft of the Royal Pakistan Air Force. This aircraft was later preserved in the PAF Museum in Karachi in its yellow livery. (Kamal Butt)

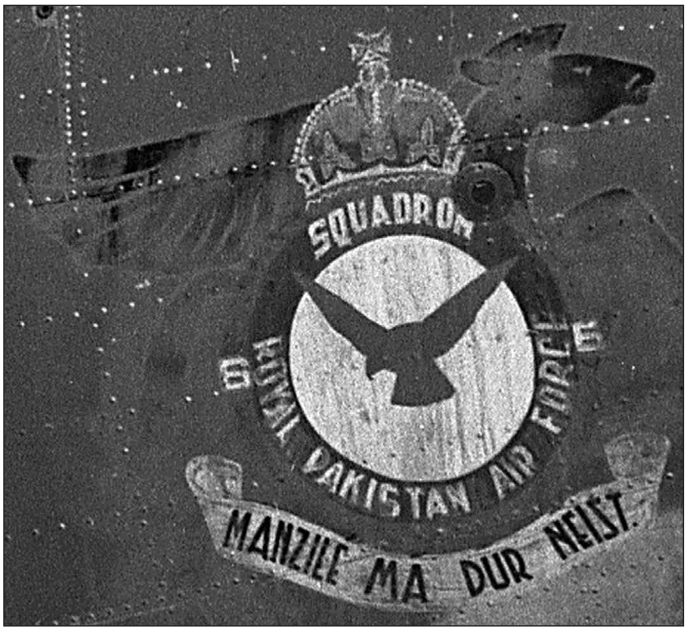
their RAF camouflage of dark green and ocean grey and medium sea grey underside. On these aircraft RPAF roundels and fin flash replaced RAF markings temporarily. Pakistan's share of Tempest II aircraft was officially handed over on September 25 1947,[8] and all the three aircraft identified as part of the August 15 flypast were later transferred to RIAF.[9]

With individual options exercised by personnel,[10] RPAF strength amounted to 220 officers and 2,112 airmen with communal composition predominantly Muslims (197 officers) followed by 10 Christians, 11 Anglo Pakistanis, and two Hindus. The personnel included about five dozen pilots, with the bulk having anywhere between 1 to 5 years of experience; this number of pilots available for an aircraft fleet of 122 aircraft was woefully inadequate. The availability of trained navigators was even worse with only seven officers, and the situation did not improve regarding Technical Engineering/Signals/Electricians/Armament branches with only a dozen officers available.

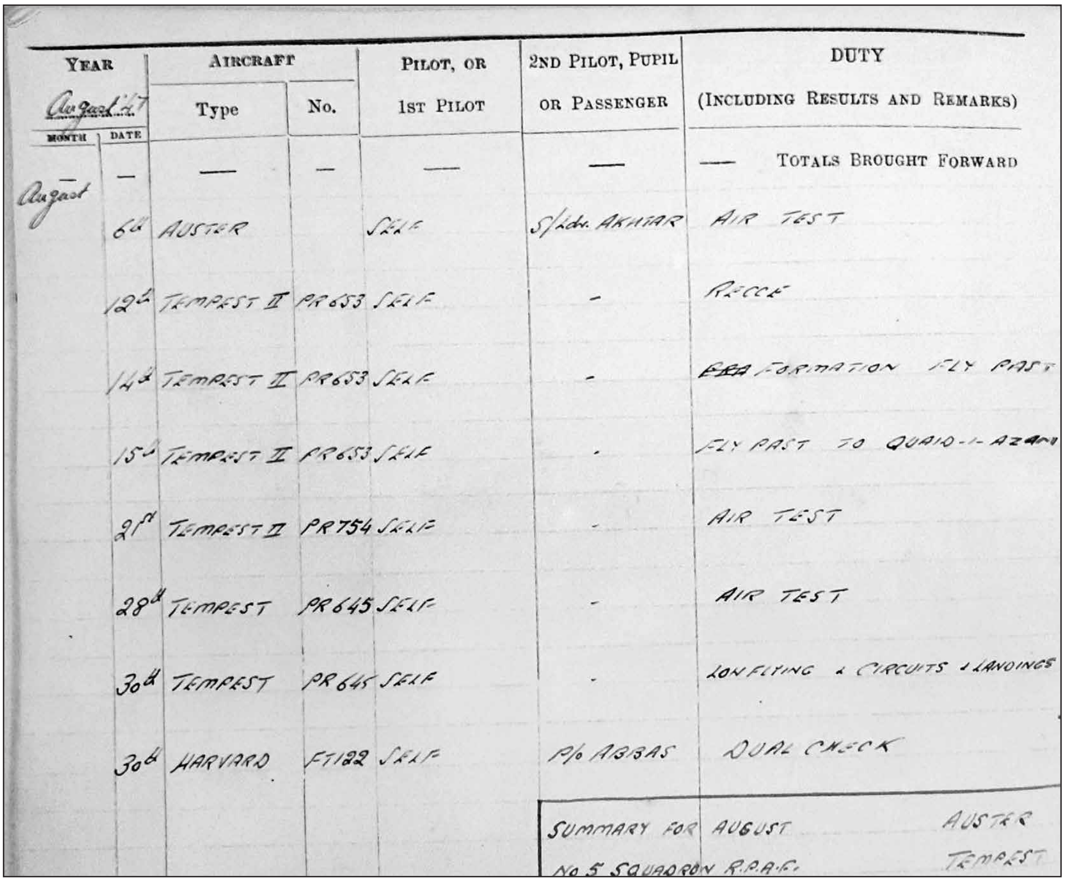
As noted before, the RIAF itself, from which RPAF was founded, was never a self-sufficient military service. Its administration and maintenance functions were mainly with the Royal Air Force with the two air forces closely integrated during the war. Therefore, the division of RIAF on communal grounds meant that the organisational support for the two new air forces was compromised. For RPAF the situation was more acute as explained by RPAF's first Air Commander:

> Inevitably on the partition the personnel structure was very unbalanced both regards to ranks and branches/trades. Majority of RPAF airmen and officers are holding acting rank of abnormal seniority for their age and length of service. Very few officers have even commanded stations (only one before partition) and none is RAF Staff College trained (two have been selected for the 1949 course). Those with war experience derived it with SEAC-the majority at the time when complete air superiority had been obtained.
>
> There is an overwhelming preponderance of A&SD (Administration and Special Duties) officers though none had a permanent commission.[11]

Table 2: RPAF organisation, 15 August 1947
Stations
Peshawar
Kohat
Risalpur
RAF Units in Pakistan under Supreme HQ
RAF Station Mauripur
RAF Station Drigh Road
RAF Station Lahore
RAF Station Chaklala
Equipment Depot Harbanspura
Squadrons
No. 9 Squadron (Fighter Squadron) – Peshawar, Tempest II aircraft
No. 5 Squadron (Fighter Squadron) – Peshawar, Tempest II aircraft
No. 6 Transport Squadron – Mauripur, Dakota aircraft
No. 1 Flight Air Observation Squadron – Peshawar, Auster IV/V aircraft
No. 2 Flight Provost plus Security Services



The crest of No. 6 Squadron RPAF painted on the nose of a Dakota aircraft. The crown on top is very prominent given the Royal prefix. Romanised Persian text says that "my destination is not far." (Kamal Butt)



YEAR August '47 MONTH	DATE	AIRCRAFT Type	No.	PILOT, OR 1ST PILOT	2ND PILOT, PUPIL OR PASSENGER	DUTY (INCLUDING RESULTS AND REMARKS)
—	—	—	—	—	—	— TOTALS BROUGHT FORWARD
August	6th	AUSTER		SELF	S/Ldr. AKHTAR	AIR TEST
	12th	TEMPEST II	PR653	SELF	-	RECCE
	14th	TEMPEST II	PR653	SELF	-	~~EBA~~ FORMATION FLY PAST
	15th	TEMPEST II	PR653	SELF	-	FLY PAST TO QUAID-I-AZAM
	21st	TEMPEST II	PR754	SELF	-	AIR TEST
	28th	TEMPEST	PR645	SELF	-	AIR TEST
	30th	TEMPEST	PR645	SELF	-	LOW FLYING & CIRCUITS & LANDINGS
	30th	HARVARD	FT122	SELF	P/o ABBAS	DUAL CHECK
					SUMMARY FOR	AUGUST AUSTER
					No 5 SQUADRON	R.P.A.F. TEMPEST

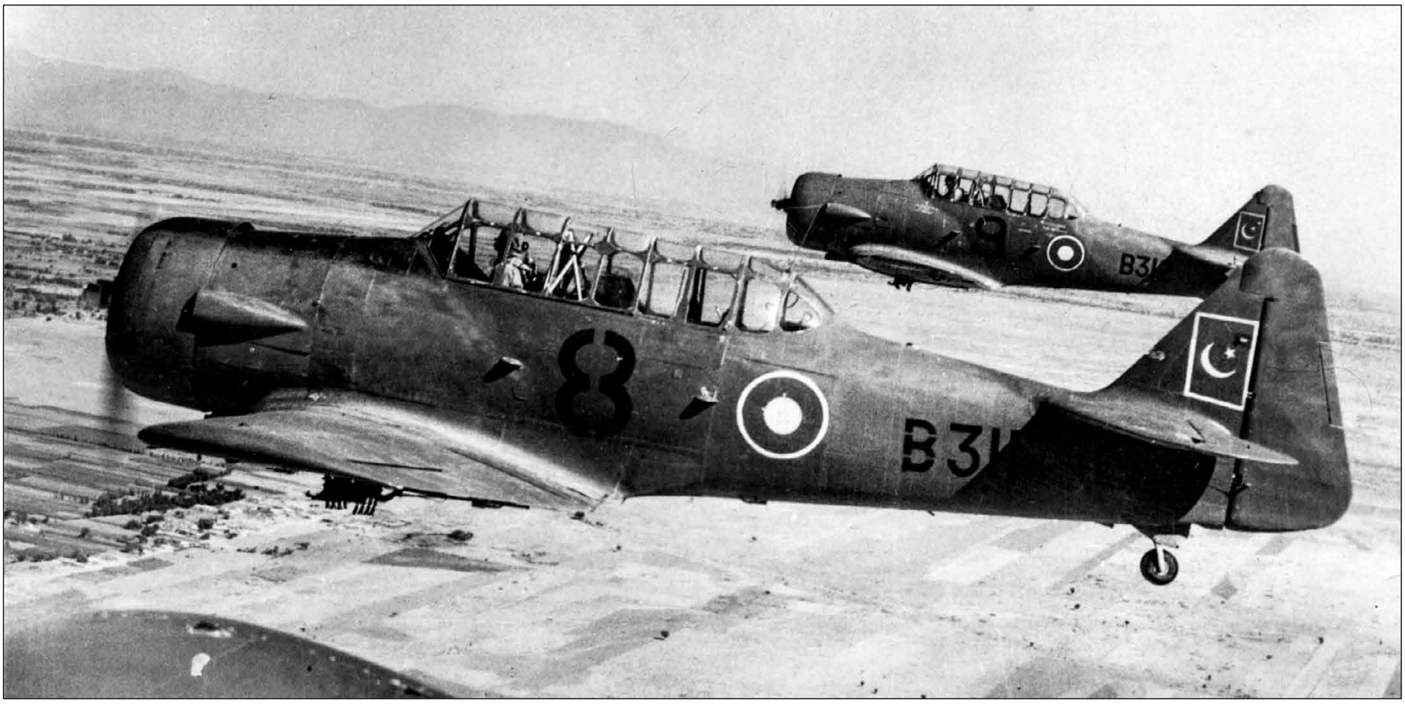
Logbook of Squadron Leader Zahir showing the flypast on August 15 and the serial number of the Tempest II he flew. (Farooq Ahmad)

Given this situation, it was envisaged that RPAF would be provided with a backbone of RAF officers and other ranks to help operate the new air force. As a result, besides the Air Commander, several other officers were seconded from RAF to RPAF. This practice would continue for the first few years of RPAF's existence, the service would benefit from the appointment of RAF officers in various positions, including its first four chiefs and other senior ranks. However, even with this help, the situation as of 15 August 1947 was not very good. An RAF establishment of 66 officers and 526 airmen was considered necessary, against which only 26 officers and 57 airmen were available on independence. Some personnel were unwilling to continue services with the new air force beyond the first few months, given problematic issues with terms of services, career prospects, and appointments.

Added to the above was the inevitable chaos and confusion of a completely new organisation in an equally new country; as Flying Officer Wasim Khan (one of the pioneering officers in the flying branch) stated: '…there was no sign of organization, nobody knew who the boss was, nobody knew where the group was, people used to go around in the officer's mess just to find out where they need to go…'[12]

A bird's eye view of the situation is best illustrated by the first information and guidance letter addressed by Air Commander Air Vice Marshal Perry-Keene to RPAF station commanders a month later, on 15 September 1947, which said:

> We have a considerable task to sort ourselves out. Postings ex-India have necessarily been somewhat 'blind' as individuals had to be put down on RPAF Stations wherever opportunity offered. Some speedy re-postings are essential and you must ensure



Harvards were the mainstay training aircraft for RPAF. (Farial Sikander)

> rapid dispatch of personnel posted away from you however necessary their retention on your station may appear to you…. Our immediate task was to get the force allotted to us operational. We barely have sufficient trained pilots and ground personnel to man No. 5 and 9 Squadrons, the AOP (Air Observation Flight) we have undertaken to provide (pending their replacement by Army pilots), and two Communication Flight Harvards. Any expansion of the meagre Tempest Force and the recreation of No 6 Squadron depends mainly on the ability to train flying and ground personnel now in the service. We need to get No 6 Squadron operational as soon as possible. At present, the RAF Transport Force in India and Pakistan is helping us out on a considerable scale but it will be withdrawn – probably by April next at the latest. No 6 Squadron which before August 15, was largely Indian manned had but three partly trained pilots and a handful of partly trained ground personnel…'[13]

Just before 15 August 1947, Air Vice Marshal Perry-Keene met Mr Liaquat Ali Khan, the Prime Minister-designate of Pakistan. Mr Liaquat Ali Khan, who was also to hold the portfolio of Defence Minister, chaired what was effectively a Defence Council of Pakistan meeting. In the meeting, Air Vice Marshal Perry-Keene was told that RPAF's primary responsibility would be watch and ward duties in the North-West Frontier. In terms of its mission in the early days, RPAF inherited the role that RAF and later RIAF played in defence of the sub-continent. Just a few months after independence, the eastern border would become dominant in the service's mission. At the same time, the 'watch and ward' duties for the western border would also occupy RPAF periodically.

To meet its operational goals, the RPAF needed a strong foundation that would include a clear mission and organisational structure which supported operational needs, identified roles and responsibilities, a chain of command, and a framework of rules and procedures. The Royal Air Force legacy and the presence of experienced RAF personnel provided the much-needed foundation and would become the RAF's compelling contribution to the new air force. To the extent possible, RPAF was organised on a pattern similar to the RAF. Besides, the Air Commander seconded RAF personnel were posted to the organisation, particularly in senior positions. RPAF's organisational chart as of August 1947 was as shown in the nearby chart.[14]

The Air Commander's policy was to organise command on a delegated basis, creating the No. 1 Group responsible for supervising all units in the north. A second No. 2 Group was created to be responsible for the air defence of Pakistan. The latter remained a cadre only given a lack of units under operational command and was disbanded sometime later. Between the Air Commander and the Army Chief, it was also agreed that the concept of unified services followed before partition for the Indian Army and RIAF should be continued. This meant that Pakistan Army would provide some services to RPAF, which the Indian Army had earlier provided to the united Air Forces. These services included:

1. Public Relations
2. Judge Advocate General
3. Medical Services
4. Works, Military Engineering Services
5. Motor Transport Repairs for common vehicles.

The plans for the division of assets assumed a positive working relationship between the two countries and a functioning Supreme Headquarters. However, events took a different turn, with widespread riots and violence. The fast deteriorating situation on account of the violence and deteriorating relationships between the two countries meant that Supreme HQ, which was to support the two services, could not be functional. It was announced that on 31 December 1947, the Supreme HQ would be disbanded, and the needed administrative support for RAF personnel serving with RPAF would end. The Government of Pakistan would need to offer new terms to the RAF personnel and therefore reach agreements with the United Kingdom. It also became clear that the expectation that RPAF personnel with continue to train in stations and units of RIAF could not hold, and RPAF would have to come up with its training organisation and resources.

Transfer of assets and building up adequate manning levels were pressing needs that RPAF faced immediately. Besides, the communal riots and deteriorating relations between India and Pakistan meant that the division of assets would not be smooth. As recollected by then Flight Lieutenant Zafar Chaudry (later Air Marshal and Pakistan Air Force's Chief of Air Staff from 1972–74):

> Upon the division of India, the RPAF was allotted eight Tiger Moth aircraft from RIAF's Elementary Flying Training School at

Royal Pakistan Air Force – August 1947

Air Branch	Technical Branch	Admin Branch
▪ Operations ▪ Intelligence ▪ Training ▪ Signals ▪ Meteorology ▪ Statistics	▪ Technical ▪ Armament ▪ Equipment	▪ Manning ▪ Regulations ▪ Accounts ▪ Education ▪ Medical ▪ Provost ▪ Physical

> Jodhpur. Our team was tasked to ferry them across to Risalpur. When we reached Jodhpur, we were told that we could only have seven of them as one aircraft had been damaged beyond repairs at that station. After a careful briefing by the leader, the formation took off in the early hours of 12th September.
>
> The seven machines were piloted by Squadron Leader Joseph; later, he became Air-Vice Marshal Yousaf, Flying Officers Masroor Hosain and myself, Officer Cadets Lanky Ahmad, Saleem, Asif, and Chaudhry. It was rare that the trainees with less than a hundred hours of flying experience were required to ferry aircraft over such a long and difficult route. Moreover, the aircraft were to be flown in formation, and the cadets had not even practiced formation flying.
>
> At our third stop at Nawabshah, thousands of people, including the fresh arrival of Indian immigrants, swarmed all over the airfield to see the spectacle, despite the stifling heat; their enthusiasm was something to watch. The fact that the aircraft now belonged to Pakistan made them wild with excitement. The night was spent in a local rest-house, where all of us fell dead asleep after a full day of exhausting but satisfying work. Next morning, twenty minutes after getting airborne for Jacobabad, Joseph's aircraft force-landed in the desert with a "dead engine." The remaining six continued to Multan via Khanpur, barely making it before sunset. Here, one aircraft flown by Cadet Chaudhry sustained some damage while landing, and then we were left with only five Tiger-Moths.
>
> On reaching Mianwali on the morning of 14th September, the escorting Dakota crew told us that some sugar had been found in the fuel tank of the Leader's aircraft, which had been the cause of the engine failure. On checking our aircraft, we found the filters in three of them were choked with sugar. Had we taken off for Risalpur in that condition, the ending would have been tragic. As it was only one aircraft flown by late Masroor Hussain was declared serviceable and flown to Risalpur, landing there in the afternoon of 14th September, which was our planned date of arrival.
>
> At Mianwali, we waited for two days under the open sky for the arrival of the Air Headquarters' inspection team, which somehow never showed up. In the meantime, the four unprotected Tiger-Moths were likely to get damaged in the seasonal dust-storms without any mooring facility. We cleared the engines as best as we could with the limited staff, ground tested the aircraft, and took off for Risalpur in a gale, which was threatening to overturn them. The engines made funny noises and the weather looked grim, but we pressed on and reached our destination in the evening. The pilots looked like ghosts, laden with dust and oil, unshaven beards and hardly any clothes on them due to heat and humidity. It was obvious that someone had put sugar in the fuel tanks of four aircraft which were housed in a separate hanger at Jodhpur. Was it a parting kick or a gift from some Indian airmen?

Air Marshal Zafar Chaudry adds details to the incident by narrating that his team included two airmen to help with maintenance requirements.[15] When the group reached Jodhpur, and the aircraft had been air tested, he asked the airmen to push these aircraft in a hanger as a matter of caution. The following day, he found that some aircraft were still outside, which annoyed him. As it turned out, the aircraft tampered with were those which had been in the hanger as it became apparent to the personnel at Jodhpur that these aircraft were going to fly to Pakistan.[16]

The two air forces faced the prospect of being non-operational because of this situation. All the reserve Tempest IIs allocated to India at the time were in Pakistan, and the country also had all the parachute stocks. [17] On the other hand, Dakota aircraft assigned to RPAF were being refurbished at Hindustan Aircraft Ltd in India, and India also had all the radio spares. Air Vice Marshal Perry-Keene and his counterpart Air Marshal Elmhirst had meetings in Delhi and Karachi to resolve the situation. They agreed to build trust by transferring allocated Tempest IIs to India in exchange for RPAF Dakotas. Developments in the Kashmir region further complicated the issue (see later). Air Vice Marshal Perry-Keene sought and received the support of Pakistan's first Defence Minister, Mr Liaquat Ali Khan, to move ahead with the transfers.

The most consequential decision made by RPAF in these very early days was setting up a Flying Training School at Risalpur, which included Initial Training, Elementary Flying Training, and Advanced Flying Training. The first course included cadets under training at establishments in united India before the partition. This 1 GD (first General Duties course) started with seven cadets, of which five graduated on 2 January 1948.[18] The Flying School was equipped with a mixture of Harvard and Tiger Moth aircraft, and some of the first instructors included two officers who became air chief of the Pakistan Air Force in later years. The newly commissioned officers were sent to fighter squadrons and had to get used to much more challenging Tempest II fighters without the benefit of flying any intermediate aircraft; later on, Risalpur was provided with a Tempest II to allow familiarisation of taxying procedures for the fighter aircraft.

Air Marshal Zafar Chaudry further recounts:

> Rahim, Khyber, S.A. Aziz, and I were instructors at Ambala and, along with two newly commissioned pilots, flew the six aircraft directly to Lahore from Ambala. I remember people getting out of the airplane and kissing the ground, and Wing Commander Rabb welcomed us. Our departure from Ambala was not too unpleasant though there were certain unpleasant facets to it. We had to collect people from various parts of the town, and there had been riots, and we needed to have armed escorts and gather people who lived in the town at night. We arrived at Lahore and then went to Risalpur; Steve Joseph and Timmy Shahzada were already there, and so was Asghar Khan. Here we had visions of starting our work the following days and getting on with building a new air force. To our disappointment we found that all the men had not arrived and spares were not there yet, so we had to wait a bit for things to get organized. The training flight was allocated three Harvards… truthfully we did not do much methodical work in setting up a course structure. There was kind of a gentleman's agreement; we were instructors and knew what to do; for the ground school, there was a syllabus, but for flying, it was haphazard and ad hoc.
>
> When the partition happened, many officers in RIAF said to us, you lucky Pakistanis, you have such good seniors, and many people said this, meaning people like Raza, M. Rabb, and Asghar. What this meant was how officers were measured at the time; a chap who was a nice man, good at heart, and played a good game of tennis, supported you was a good chap. This was the general way of thinking, very little awareness of what objective professional standards should be and what an air force needs.

Finding appropriate instructional staff and creating the necessary infrastructure in terms of well-thought-out syllabus and

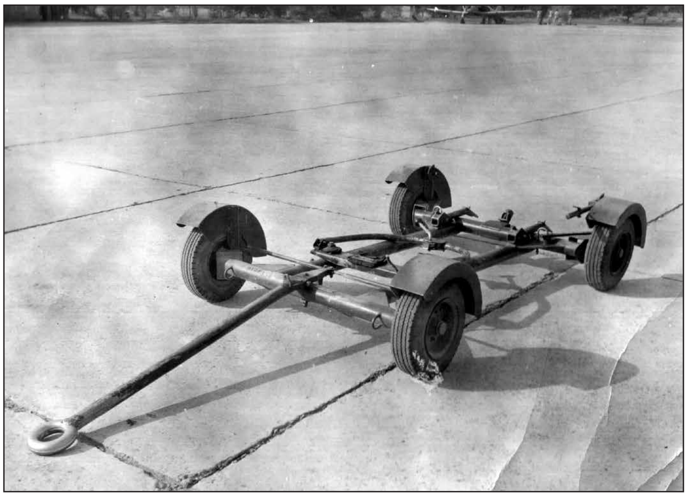
RPAF's pioneering instructor pilot: young Khyber Khan, is standing second from the right in 1944. He was among the first instructor pilots at Risalpur and would later become an Air Vice Marshal and PAF's chief of staff. He would hold key appointments in operations and other branches along the way. (Alan Chaves via Jagan Pillarsetti)

instructional methods was a challenge, and RPAF had to make do with what was pragmatically possible. Air Commodore T.S. Jan's narration explains:

> I was with the RIAF navigation training unit (No. 1 Navigation Training School) in India. I completed ground school for navigation training and was sent to the UK for the flying phase in April 1947. The training was conducted not by RAF but by a civilian contractor Straight Aviation Limited in Essex. Five Muslim officers were in my training course, including Kamal Ahmed, Ghulam Ali, S.A. Khan, Dimmy Iqbal, and myself in a group of 28 officers. By the time I finished the course in November 1947, partition had happened, and I returned to Pakistan instead of India and reported to Air HQ Peshawar. I met Director Training Wing Commander M. Rabb, sitting in his office with one Squadron Leader B.K. Dass. He and Dass straight away asked me, can you teach? My reply was that I have never taught, but I guess I can. I was told that was good enough and that I should proceed to Risalpur, where I was to be the navigation instructor for undertraining pilots.
>
> I reached Risalpur and there met the station commander Wing Commander Asghar Khan. He also asked me if I had ever taught, and with my reply in the negative, he said well, one has to start somewhere. There I was a navigation instructor at Risalpur; I had to develop my syllabus. I was told that map reading was essential for pilots under training. I started the course with map reading, and a week later, I was done with what I thought needed to be taught. Now I had a problem as several weeks of the course were still left, so I started teaching what I had learned in my navigation training, things like Rebecca and Eureka, which was of no relevance to the students, though.

Given the importance of the Flying School for RPAF, Risalpur was visited by Pakistan's founding father, Mr Muhammad Ali Jinnah on 13 April 1948. His speech on this occasion laid the values for RPAF:

> It gives me great pleasure to pay my first visit to a unit of the Royal Pakistan Air Force. There is no doubt that a country without a strong air force is at the mercy of any aggressor. Pakistan must build up her Air Force as quickly as possible. It must be an efficient Air Force second to none and must take its rightful place with the Army and the Navy in securing Pakistan's defence… I am pleased to learn of the progress this school has made and as desired by the Air Commander and yourselves I name it from today "Royal Pakistan Air Force College"….



Early ground support equipment. (Kamal Butt)

Besides Risalpur, setting up a technical training school in the early months of RPAF's creation was as important a step because the shortage of technical staff was even more acute than aircrew. Like RPAF, the school faced significant difficulties at its inception with severe manpower and equipment shortages. A large part of the equipment for the school was salvaged from junkyards. The school initially inducted 200 trainees who had been undergoing courses in RIAF and increased its numbers to 400 under training some months later.[19] The fact that the school started and grew within months speaks volumes of the utter dedication of RPAF personnel at the time. In the words of one veteran of the technical trade:

> … RPAF was in a severe shortage of technical instructors, and that is what was causing the delay. Therefore, during the ensuing period, we were mostly left at the mercy of Ground Combat Instructors, who would keep us engaged in some activity based on our trades.
>
> Suddenly one day, there started a whole flurry of activities. People were now running around with a sense of great urgency. Departments and sections were created, and the whole place started taking the shape of a technical school. Our patience had finally born fruit; we now felt like being part of an organization. Several instructors were moved to the school, some of whom had just attended their integration course at Ground Technical Training School in Tambaram. These instructors were assigned varying instructional duties at the RPAF Technical Training School.
>
> Once the instructors arrived, we were attached to different sections or shops and the courses to be held there. D hangar was to be readied for airframe training. C Hangar for Engine Shop, and so on. Finally, the day came, and our excitement knew no bounds when the keys to the D hangar were handed to us. Everyone rushed to open the west side door, assuming that it would be full of all kinds of equipment. Drigh Road used to serve as a large depot for the Royal Air Force (RAF) during the Second World War and provided logistic support to the Burma theatre

of war. Our dreams were shattered to find only a few broken workbenches that would not make any impact on the start-up of a technical training school every one of us had envisioned. We had spent sleepless nights preparing training plans and other materials. We spent hours drawing aircraft system schematics and discussing various ways of presenting them so that the new recruits could be imparted effective training. We took a significant risk in bringing the schematics and other useful tools on our exit from India. We did not have the required material to prepare presentations, layouts, and displays. Everyone was worried and depressed about this situation. How could the British so quickly take away such a large quantity of equipment, including aircraft? Someone suggested that these could have been disposed of in the nearby uninhabited area. We started a frantic search, some of us took a trip to the Karachi scrap bazaar, and others wandered around the large empty yard near Drigh Road base. One day an old-timer non-combatant working for the RAF informed us that there was a salvage yard near the Western Assembly Lines where a large quantity of equipment was moved and was due to be picked by the Karachi scrap dealers. We rushed to this salvage yard and, to our amazement, found about 40–50 aircraft of different types as well as a large quantity of spares. These included about 42 Supermarine Spitfires Mk VIII. This aircraft being one of the best at that time, its Rolls-Royce Griffon Mark 65 Engine would catapult the aircraft to 40,000 feet in just a few minutes. It could hold a 500lb bomb apart from other ammunition. Unlike today's aircraft, it did not have any air-conditioning or pressurization systems, but still, every pilot loved to fly it.

These 42 Spitfires were damaged to a great extent, but still, 30 of them could have been repaired and made airworthy. A year ago, these aircraft were flown here to be salvaged – my Spitfire serial No. TZ168, on which I worked for a number of years, was also in a crate. Someone had cruelly damaged its belly using a sledgehammer. During its service with RIAF No. 8 Squadron, this aircraft was jokingly known as the Pakistani Spitfire because all its maintenance crew and pilots were Muslims. It had been flown by renowned PAF pilots like Air Commodore Khyber Khan and Wing Commander Abu Qasem Shihabudin (who was killed in the crash at Khewra). At that time, both of these men were Flying Officers. Once, our section in charge Patel was shocked to find while preparing the duty board that all of the crew assigned to this aircraft were Muslim. This happened in March 1946 in Trichinopoly, in South India.

There were two Avro Anson aircraft still in crates. Someone had opened the crates and damaged these aircraft too, and we found its wings and engines from another location. Both of these aircraft were repairable. The situation with Percival Proctor Mark II aircraft was no different. These were used for pilot training. Their spare parts were scattered in different places, probably giving rise to the conclusion that these aircraft were unserviceable. I had worked on all of these three aircraft types and recognized their parts and systems very well.

The British rulers always had a negative attitude towards Muslims. Also, our high-ups were not using their judgment, and there was resistance within RPAF to re-build these aircraft. If India could use such aircraft until 1960, we could have also repaired and flown them for a considerable period. India continued to order these aircraft after the partition. Right after the Kashmir war of 1948, Pakistan stopped a consignment of Spitfire aircraft destined for India at the Karachi seaport. These aircraft did demand a lot of effort from the ground crew but were safe to fly.

Our spirits were elevated by the discovery of this treasure. It became a daily routine soon after finishing our daily parade; we would go to the salvage yard at the Western Assembly Lines and literally dig out from sand and dirt the spare parts we needed to prepare displays and layouts. In a few days, technical instructors like Abdul Sattar, Ali Reza Ahsan Zaidi, Bakhsh, and Stanley also joined our team. With Bakhsh's help, a bike was arranged which one would ride in the morning and bring back loaded with all kinds of spares. In search of spares and tools, we searched every bush in the Western Assembly Line and were amazed to sometimes find new spare parts and tools buried under the sand. It looked like this was done on purpose to force Pakistan to buy these from Britain at an exorbitant price.

When this task was given to us, a handful of men worked days and nights and, within 3–4 weeks, had dug up enough material to satisfy the training requirement of almost all sections.

The British attitude was so hostile towards Muslims that they would not even leave any furniture behind for our use. It was the last week of November, we returned from the Mess after

Early RPAF line-up: almost all types of aircraft inherited by RPAF are visible in the photograph. In the foreground is an Auster followed by a Harvard, a Tempest II, and a Dakota. (Authors' collection)

Table 3: RPAF Order of Battle, 31 March 1948[21]

	Units	Location
1	Air Headquarters	Peshawar
Stations and Airfields		
2	Station Headquarters	Mauripur
3	Station Headquarters	Peshawar
4	Station Headquarters	Drigh Road
5	Station Headquarters	Risalpur
6	Station Headquarters	Chaklala
7	Airfield	Miranshah
Squadrons and Flights		
8	No. 5 (Fighter Bomber) Squadron	Peshawar
9	No. 9 (Fighter Bomber) Squadron	Peshawar
10	No. 6 (Transport) Squadron	Mauripur
11	Air Headquarters Communication Flight	Peshawar
12	No. 1 AOP Flight	Peshawar
Maintenance Units		
13	The Aircraft Repair Depot	Drigh Road
14	The Aircraft Repair Depot (Detachment)	Lahore
15	The Equipment Depot	Drigh Road
16	The Equipment Depot (Detachment)	Harbasnpura
17	The Explosives Depot	Malir
Provost and Security Services		
18	No. 1 PS&S Flight	Peshawar
19	No. 2 PS&S Flight	Karachi
Training Units		
20	Initial Training Squadron	Risalpur
21	Elementary Flying Training Squadron	Risalpur
22	Advanced Flying Training Squadron	Risalpur
23	Ground Training School	Drigh Road
24	Medical Training Centre	Chaklala
25	No. 1 Pakistan Air Training Corp (Punjab University)	Lahore
26	No. 2 Pakistan Air Training Corp	Peshawar
Miscellaneous Units		
27	Central Medical Board	Chaklala
28	No. 1 Air Selection Centre	Rawalpindi
29	No. 2 Air Selection Centre	Lahore
30	No. 3 Air Selection Centre	Karachi
31	RPAF Office, East Pakistan	Dacca
32	RPAF Records Office	Kohat
33	RPAF Central Accounts Office	Kohat
34	Services Selection Board (Air Force element)	Rawalpindi
35	SP Section Air, D of Org, GHQ	Rawalpindi

the evening meal, a sudden commotion started in one direction. Eager to know what was happening, we ran to the scene to find that some RAF airmen were throwing furniture from the 1st floor. This was expensive teakwood furniture. Then one of them threw kerosene oil and set this furniture on fire. We ran to get hold of fire extinguishers, but they were empty. We got hold of water and sand. On seeing this, the British airmen resorted to obscene language. At that time, some of us decided to take care of these scoundrels and got hold of whatever piece of iron or wood could be used as a weapon. The RPAF men surrounded their barracks and were ready to teach them a lesson. Had not the orderly sergeant arrived, two or three of the British airmen would have been readied for dispatch in wooden crates. By then, a drunk British Sergeant had also arrived on the scene and asked what was happening. On hearing the story, he simply shrugged and said, my men were merely celebrating their departure to England. Had not the PAF police arrived to subdue them, people like Abdul Waheed Ghori, Choudhary Siddique Gill Ghulam (later flight Engineer PIA), late Mumtaz Ahmed, Qadir Shah, and many others were ready to throw the Orderly Sergeant and the British Station Warrant Officer (who had also arrived by this time) in the fire. With great effort, this fire was extinguished, or else it would have also brought our barrack No. 54 down to ashes.

In a few days, Squadron Leader Wood and a few NCOs (non-commissioned officers) arrived. We had already prepared our training material, and PAF Technical Training School at Drigh Road started functioning on December 8, 1947.[20]

Armed with little resources but ample motivation, the school, continued to expand and around a year later had 733 trainees while graduating 228 airmen in small batches (all of them had completed parts of their training in united India). The fully Pakistani-trained batch was expected to graduate a few months later. The planned intake of trainees at the time was 80 trainees a month, with an expected turnout of 50–60 trainees per month. The remaining 20–30 were expected to move to non-technical

Table 4: RPAF aircraft, March 1948[22]

Aircraft	Serviceable	Unserviceable	Total
Tempest	19	8	27
Dakota	9	22	31
Harvard	18	6	24
Tiger Moth	6	10	16*
Fox Moth	1	0	1
Auster	19	43	62
Spitfire	0	1	1
Grand Total	72	90	162
*including 6 aircraft in India			

branches given the lack of suitability for technical trades. The course schedules and syllabuses were adjusted in duration and content to reflect RPAF's requirements. For example, instruction on liquid-cooled engines was unified with other course elements, given no foreseeable need for such instruction for RPAF.

Ingenuity on the part of the RPAF cadre to deal with the lack of instructional equipment was critical, and it was not only restricted to salvaging junkyard material. Much needed instruction equipment was improvised; one RPAF electrical warrant officer devised demonstration equipment for instruction in aerodrome lighting. This included a complete layout of domestic and technical buildings, runways, and taxi tracks and was mounted on a table in a darkened room with the possibility to use different lights separately. Sometimes this ingenuity meant a loss for the Technical School in the short run; the armament branch of the school was able to recover and make two functional turrets from junk. Still, on being made serviceable, they were sent to be fitted to RPAF Halifax bombers (see later) instead of their use as instructional equipment. Similarly, an instructional Tempest aircraft was made from scrap and equipped with a Centaurus engine lying in the scrap for years. The school was asked to send the engine for overhaul and later use by RPAF.

Approximately six months after independence, RPAF had taken its first shape, with its complete order of battle as of 31 March 1948, being as shown in Table 3.

RPAF's total fighter aircraft strength remained small and as of 31, March 1948, almost six months since its birth, its full strength was as shown in Table 4. This table illustrates the situation and chaos of a new country and its air force quite well. For one, the number of unserviceable aircraft makes up the majority, demonstrating the problems with maintenance infrastructure. The number of aircraft types also indicates that RPAF would have its hands full with managing different types in terms of maintenance. The location of some aircraft in India showed that the transfer of assets was still far from complete after six months. Of the serviceable aircraft mentioned above, 48 aircraft were allocated to different flying units, while 24 were kept in reserves. A further 20 Dakota aircraft were with Director General Civil Aviation, and two unserviceable Austers were provided to the Technical Training School.

The most interesting part of the table is the mention of one Spitfire aircraft, which is perhaps the only official reference to the aircraft type with RPAF (although as an unserviceable airframe). This reference is strange as by August 1947, RIAF itself was well on its way to replacing its Spitfires with newer Tempest II aircraft, especially since the two RIAF squadrons allocated to RPAF had already converted to Tempest II. Many RAF Spitfires were present in what was now Pakistan, and the same were indeed offered to both RIAF and RPAF. RPAF did not accept the offer in order to avoid multiple types and on account of Spitfire's in-line liquid-cooled engine (different from the Tempest II engine). It is possible that at some point in time, a Spitfire was accepted for RPAF perhaps only nominally (given mention in the unserviceable category) and in expectation of further transfers from the RAF. Later on this possibility was not pursued and RPAF therefore never operated the type.

In terms of order of battle, as of 31 March 1948, these aircraft were allocated to different flying units as shown in Table 5.

Table 5: Allocation of aircraft per squadron, March 1948

Unit	Aircraft
No. 9 Squadron (Peshawar)	8 Tempest II aircraft, 1 Harvard aircraft
No. 5 Squadron (Peshawar)	8 Tempest II aircraft, 1 Harvard aircraft
No. 6 Squadron (Mauripur)	7 C-47 Dakota aircraft
Air HQ communication Flight (Peshawar)	2 Auster aircraft, 2 Harvard aircraft, 1 Fox Moth aircraft
AOP Flight (Peshawar)	4 Auster aircraft
Flight Training School (Risalpur)	4 Tiger Moth aircraft, 2 Auster aircraft, 6 Harvard aircraft
ARD Detachment	1 Auster aircraft
One additional Auster aircraft was stationed at RPAF Station Drigh Road	

With the organisation setup completed, planning started to develop a force structure. An Operational Requirements Committee was set up, which included senior RPAF officers and Army representatives, given that the Army was the likely service with which RPAF would need to cooperate in the case of a full-scale war or for watch and ward operations. The critical decisions that the committee needed to make included:

1. Decision on whether RPAF in the immediate converts to jet fighters or continues with existing piston-engine fighters.
2. Should Tiger Moths continue as primary trainers, or should RPAF follow the apparent RAF policy to move to a side-by-side trainer by selecting an aircraft like the Prentice.
3. Replacement of Dakota transport aircraft.

It was decided that piston-engine aircraft should be retained for now with the acquisition of additional Tempest IIs aircraft followed by replacement with Fury aircraft. It was agreed to keep Tiger Moths and Harvards as training aircraft with orders to be placed for further examples. The Bristol Freighter was selected as the replacement for Dakotas (the Vickers Valetta was the other contender for Dakota replacement). As mentioned earlier, the RAF's offer for Spitfires, which were still in Pakistan, was rejected given the desire to avoid multiple types and dislike of liquid-cooled engines.

The need for additional aircraft to increase RPAF's strength was apparent, and various growth targets were set up. The first stage was called Target 1 and was to be completed by 31 March 1948:

- 2 fighter-bomber squadrons – 16 Tempest II aircraft
- 1 transport squadron – 5 Dakota aircraft

- 1 AOP Flight – 4 Auster aircraft

Together with small-scale schools for recruits, technical and flying training, and the nucleus of a maintenance organisation.

As RPAF's order of battle above shows, the first six-month target was achieved, and additional targets were set as follows:

Target II: To be completed by 31 March 1949
- 2 fighter-bomber squadrons – 32 aircraft
- 1 transport squadron – 20 aircraft
- 1 AOP flight – 4 aircraft
- 1 communication squadron – 8 aircraft
- Together with a corresponding training and maintenance organisation

Target III: for the ultimate development of
- 4 fighter-bomber squadrons – 64 aircraft
- 1 transport aircraft – 10 aircraft
- I AOP flight – 6 aircraft
- 1 communication squadron – 10 aircraft

Later on, a Target IV was established as follows:
- 1 light bomber squadron – 8 aircraft
- 5 fighter-bomber squadrons – 40 aircraft
- 1 transport squadron – 10 aircraft.

As mentioned before, the AOP role with RPAF was a temporary arrangement (until the Army's aviation capacity was developed); Target IV noticeably omits the AOP capacity.

While the plans show ambition and a direction to build a reasonable force, these plans were superseded and amended frequently on account of various developments and opportunities. The ad hoc nature of this planning effort is illustrated by Target IV where the possibility of acquiring some Brigand aircraft from Britain resulted in proposed force structure including light bombers.

3
CONSOLIDATION

Security Context

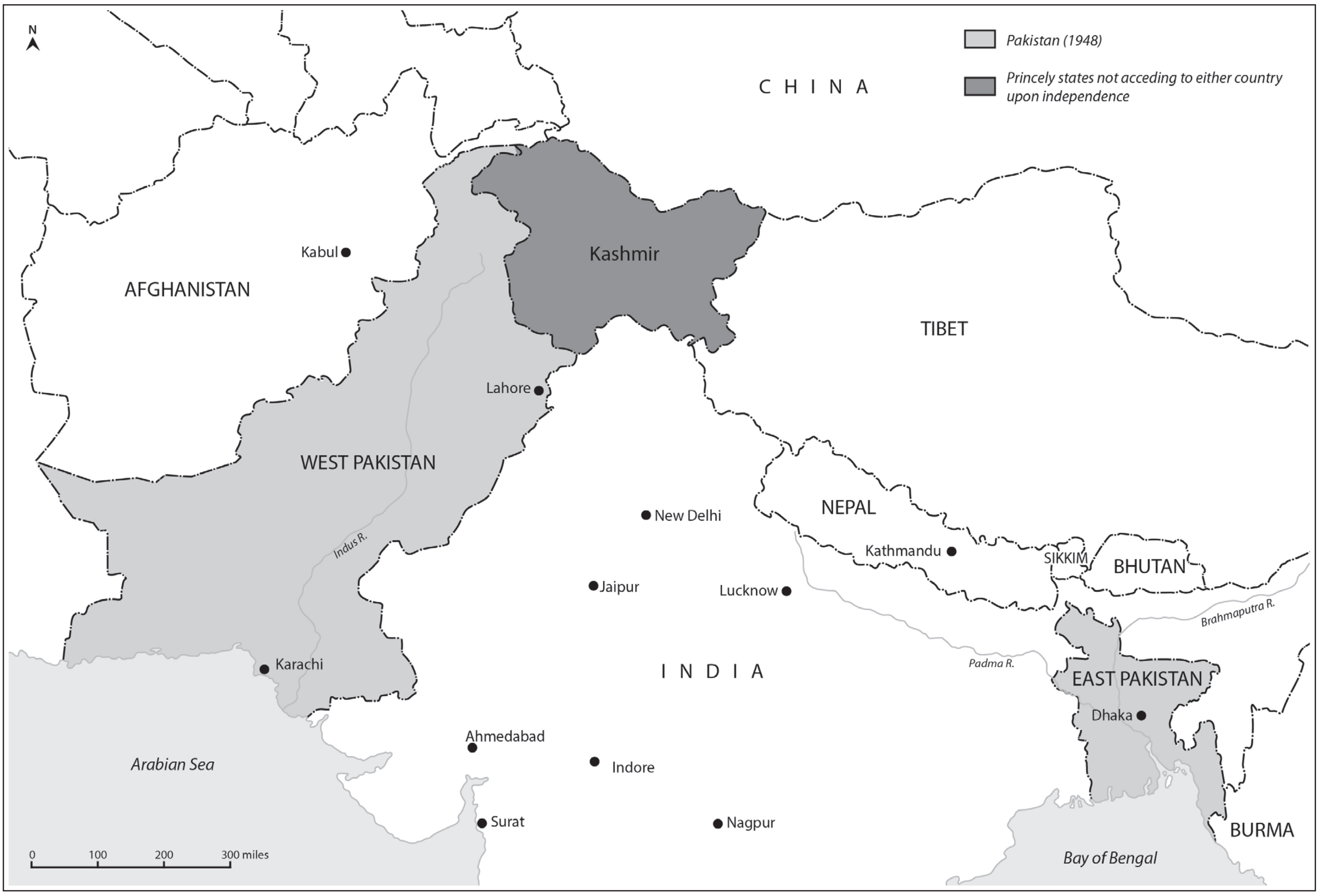
Security is a paramount concern of any state, and while national security is a broad concept, securing the state's physical borders is a fundamental requirement. Pakistan, at its birth, inherited borders that would have tested the most well-placed of states. At the same time, Pakistan had to face numerous other challenges; each of those on its own could overwhelm a nation any less resilient. No wonder Indian Congress leaders expected the new country to fold up shortly after its creation leading to what they thought was inevitable – the reversing of partition.

Pakistan was composed of two wings, West Pakistan, formed from the Muslim majority provinces in western India, and East Pakistan, which was created from the partition of the province of Bengal in the east. The two wings were separated by hundreds of kilometres of Indian territory, which in later years meant that the two wings of the country were separated by hostile territory. The lack of natural features which could help identify the country's borders added to the complications around demarcation, making Pakistan's security situation more intractable.

West Pakistan was situated in an area that was traditionally considered to be the likely venue for any southward push by the Soviet Union. The tribal regions that bordered Afghanistan were never folded into British India's administrative and governance structures. In the events leading to the partition and creation of new states of India and Pakistan, the King of Afghanistan opportunistically decided to raise the issue of the possible inclusion of the North-Western Frontier Province into Afghanistan rather than the proposed state of Pakistan. Afghanistan now considered it advantageous to challenge its international border with British India. Therefore, Pakistan had to contend with a new threat dimension besides the traditional concerns over the western border. Subsequently, tensions between the two countries would recur periodically, and Pakistan was forced to keep a wary eye on West Pakistan's border with Afghanistan.

While most countries would consider one problematic border to be of concern, Pakistan and South Asia were dealt a further cruel blow in the shape of what is called the Radcliff Award (named after Sir Cyril Radcliff, the chairman of the boundary commissions formed to demarcate boundaries of new states of India and Pakistan). The partition of British India into two new states was essentially focused on determining the boundaries of the two countries across the provinces of Punjab and Bengal, hence dividing the provinces into Pakistani Punjab, East Punjab (India), West Bengal (India), and East Pakistan. The essential principle to be followed was that the communal composition of administrative districts within the provinces would determine whether the district would become part of Pakistan or India. The most inexplicable decision in the process was allocating the Gurdaspur district of Punjab to the new state of India. The district was majority Muslim and provided land transport links to Kashmir to its north. Allocation of this district to India facilitated its latter military position in the state of Kashmir and significantly contributed to the Kashmir dispute, which bedevils South Asia several decades later. The Radcliff Award also threatened Pakistan's very existence as critical headworks controlling agricultural water supply to Pakistan were awarded to India. The Punjab province on the Pakistani side was the new country's food basket, and the province's agriculture was dependent upon an extensive agricultural canal system that India could now control. This manifested just a few months after the partition when in April 1948, India stopped the water supply from two canals to Pakistan, a step that jolted the new country. Perhaps no other action could highlight Pakistan's vulnerabilities. A subsequent interim agreement with India restored the water supply, followed several years later by a treaty between the two countries under the auspices of the World Bank. Nevertheless, for Pakistan, the threat was established.

British India itself was a creation of a complex empire-building process with the result that not all parts of colonial India had the same political identity. The nature of British rule varied in some cases, and the arrangements which allowed the colonial administration



Map of West Pakistan, East Pakistan, India and Kashmir at the time of the partition in 1948. (Map by George Anderson)

to exercise power were also a function of history, geography, and political expediency. Over the years, these political structures were legitimised by either overt and deliberate actions or just by the fact that they were in being. This empire-building process incorporated hundreds of princely states, which were states within British India where the local ruler exercised varying degree of political autonomy within the framework of overall British suzerainty over these states.

The scheme to end British rule and the creation of India and Pakistan envisaged that these princely states would accede to either of the two new Dominions. The accession to one of the two Dominions was left to the discretion of the ruler of each state. However, it was clear that the principles of communal composition of the state and geographical contiguity would be applicable. For Pakistan, the princely states accounted for almost half of the landmass of its western wing (West Pakistan and current-day Pakistan). Therefore, upon independence, Pakistan not only had to deal with insecure borders but also had to secure the accession of various princely states, without which the country's existence would have been jeopardised. Additionally, the central administrative and institutional setup of British India, with its capacity for governance, was primarily situated in areas that were to become India; Pakistan's inheritance of experienced personnel, treasury resources, and organisational capacity was grievously inadequate. The need to secure its landmass along with fragile borders necessitated that the new state of Pakistan had to ensure its very existence. Therefore, priority had to be accorded to a "capacity-building" that would allow the state to exercise its authority.

The Radcliff Award and the issue of the princely states resulted in what would become the source of a conflict still ongoing in South Asia. The state of Kashmir was ruled by Maharaja Hari Singh, a Hindu ruler who presided over a predominantly Muslim population. The Maharaja's governance was not very effective, with its majority Muslim population feeling alienated on account of regular persecution. At the time of partition, the Maharaja's machinations in cohort with Indian politicians and the Viceroy, and the ultimate decision to accede to India proved deeply unpopular. Atrocities of the Maharaja's forces against the Muslim population soon created an all-out rebellion in favour of joining Pakistan, which volunteers from Pakistan quickly joined. The state of Kashmir also included the areas of Gilgit and Baltistan in the north. Still, the state's control over these areas was historically nominal and the areas were effectively under British rule. The local forces in Gilgit and Baltistan had no affinity with the state of Kashmir and considered themselves under British control. The Maharaja's decision to accede to India also resulted in outright revolt in these areas, with local forces quickly overthrowing the Maharaja's rule. These developments resulted in the first Kashmir War and RPAF's first air operations on the eastern border, a subject discussed in more detail later.

West Pakistan's other borders were with Imperial Iran and the People's Republic of China; these borders did not create lasting conflicts. Any possibility or apprehensions between Pakistan and these two countries were managed through diplomatic means. West Pakistan's northern borders were with China and had no outstanding issues. Pakistan was one of the few countries that recognised the communist regime in China early and gradually worked to establish a beneficial relationship with China.

Pakistan's relations were cordial with Iran, the border with Iran was not demarcated, and both countries realised earlier on that settling the border was necessary to avoid the risk of any conflict developing at a later stage. The British Empire had also controlled part of Iranian territory. Again, the need to demarcate borders was not compelling; a border commission between Iran and Pakistan was set up as early as 1949. This allowed the two countries to resolve outstanding border issues over the coming years, and therefore West Pakistan's border with Iran remained stable.

East Pakistan bordered Burma, which was almost a hundred miles in length in an area commonly called the Chittagong Hill Tracts. The border was formed by River Naf, which kept on changing its course and, therefore, could result in ambiguities on the border. While Burma and India were both British colonies, this had little consequence, but with Pakistan being formed, the issue needed to be resolved. The additional problem was that Burmese Muslims lived in the area that bordered East Pakistan and demanded a union with Bengal. This was actively discouraged by the Pakistani government and earlier by the All India Muslim League under Jinnah. Diplomatic efforts ultimately resolved these border issues, and Pakistan achieved stable relations with Burma.

Besides the border with Burma, East Pakistan was surrounded on three sides by India and inherited many border problems with India. In some cases, enclaves of India or Pakistan's territories existed on either side of the border, with mutual agreement, a boundary tribunal was formed where these issues were discussed, and over the years, the two countries were able to settle most of these issues. Nevertheless, the fact that the eastern wing was practically surrounded by India and the tense relations between India and Pakistan meant that the borders on this wing were hardly secure.

Two additional factors accentuated Pakistan's security problems; the developing cold war between the two superpowers; and India's unwillingness to transfer to Pakistan its due share of British India's assets that were allocated to it. Table 6 illustrates what was received by Pakistan out of its share.

Table 6: Share of military assets and receipt[1]

Description	Pakistan's share	Receipt
Ordnance store	160,000 tonnes	23,225 tonnes
Vehicles (soft)	1,461	74
Vehicles (armoured)	249	Nil
Ammunition	40 to 60,000 tonnes	Nil
Engineering stores	172,667 tonnes	1,128 tonnes

Non-availability of stores which were Pakistan's due share, added to already existing deficiencies of military capacity. Other issues that compounded Pakistan's security problems were lack of a military infrastructure in terms of local production capacity and experienced manpower for all three services. None of the significant ammunition-producing factories or repair factories of British India were located in areas that were to become Pakistan. Like the RPAF, the newly formed Army and Navy also faced a severe lack of officers and those experienced at a higher level of command.

While Pakistan was struggling with its inherited security problems, the worsening relationship with India meant that the growth of Indian military capability would become a serious concern. The Indian Air Force was already far better placed than RPAF at partition; it had inherited the vast majority of trained manpower, a strong and competent core of Indian officers at senior ranks, and the requisite infrastructure (including Hindustan Aircraft Limited). Further-growing Indian air power would add urgency to Pakistan's need to address RPAF's shortcomings.

India's Air Power growth

At independence, IAF had almost three times the number of aircraft allocated to RPAF, with the number of fighter aircraft nearly four times as many. Shortly after independence, RIAF secured 50 Spitfire Mk XVIII aircraft available at Drigh Road Karachi after RPAF refused to purchase the same to avoid multiple types in its inventory. RIAF was also quick to order further Tempest II aircraft obtaining additional 109 aircraft by 1951.[2]

The Indian government started making significant investments in developing a capable air force. Soon after gaining independence, it became the first air force in Asia to begin operating jet fighters by acquiring de Havilland Vampires from the UK in 1948. More ominously, the Vampire acquisition included a contract to license build the aircraft and its engine in India, which outlaid its plans for a large air force. India eventually acquired a total of 400 aircraft of the type. The induction of Vampires started with the establishment of an Air Testing Unit at Palam, with No. 7 Squadron RIAF elected to be the first jet squadron (RIAF would drop its Royal prefix on 16 January 1950, with India being declared a republic).

Soon enough, plans were made to expand IAF to a 15–20 squadron strength force, and commensurate efforts were initiated to build an infrastructure to support this strength. The UK's Percival trainer aircraft and a local license to build the trainer at Hindustan Aircraft Limited (HAL) were acquired. Besides, a Reserve and Auxiliary Air Force Act was passed by the Indian Parliament in 1952, which led to the creation of a reserve Air Force. Five squadrons under this scheme were established, creating the base for further expansion.

Taking advantage of large aircraft stocks left in India after the Second World War, IAF acquired several B-24 Liberator aircraft. India's nascent aircraft industry under the umbrella of HAL was tasked to recover these aircraft and ultimately managed to deliver 40 aircraft to IAF, allowing it a strategic bomber force. The first six Liberators were delivered to RIAF in November 1948, followed by further batches of two or three Liberators, being delivered to RIAF periodically. A parallel effort was made to train the requisite crew for this strategic air offensive capability which RIAF's expansive training establishment was well placed to support.

These expansion plans also included the development of operational infrastructure. Near Pakistan's borders, air bases at Adampur and Halwara were added to the existing Ambala airbase to become major operating bases. RIAF's large fleet of Dakota transport aircraft, supported in-country by HAL, was augmented by purchasing C-119 Packets from the United States.

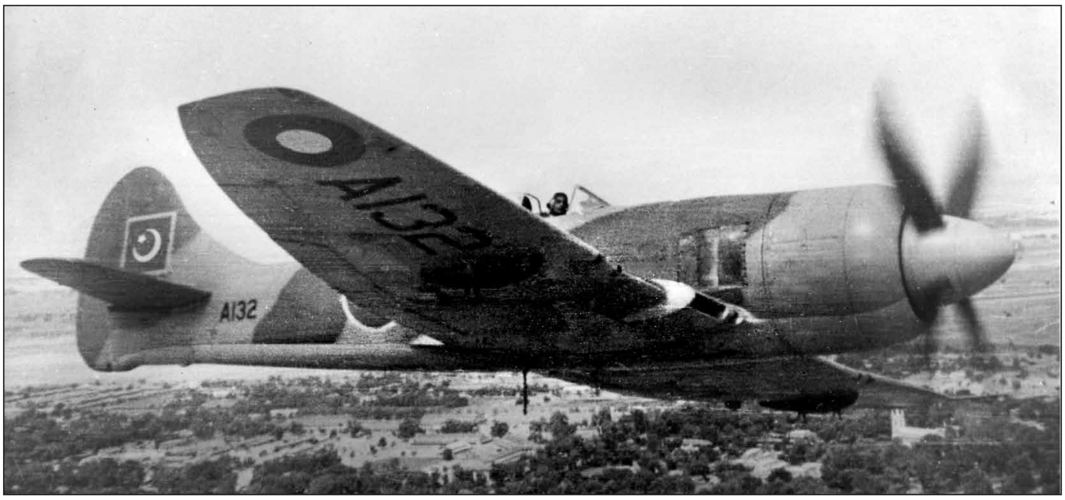
While the above-detailed expansion plans were in motion, the Indian government decided to diversify its procurement sources in a significant policy decision. A clear sign that the Indian Air Force was confident in its capacity to absorb not only the expansion that had already taken place but was also able to induct new systems based on the support and procedures of a new source. This decision manifested in a contract with Dassault in France for the supply of 71 Ouragan jet fighter-bombers in early 1953, a purchase that was later expanded to 104 aircraft.

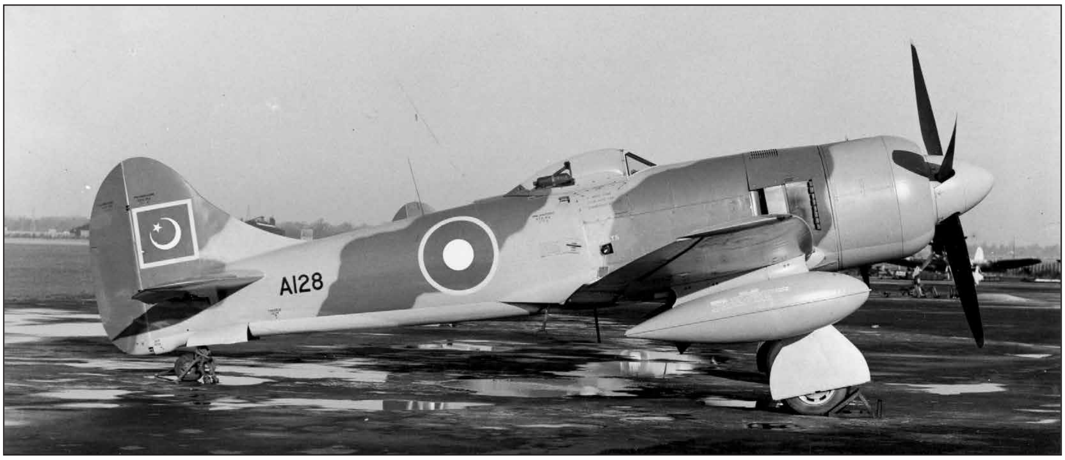
Within the first five to six years of its independence, the IAF was, therefore, well on its way to being a largely jet fighter force with a strong offensive capability. It demonstrated its capacity to undertake air operations first in the Kashmir war of 1948 and then by supporting India's "police action" against the state of Hyderabad. Also, IAF was supported by a robust in-country infrastructure which was now expanding through license production of fighter aircraft and projects for local design of aircraft (HAL HT-2 primary trainer, an Indian-designed aircraft that entered production in 1953).

Fighter Aircraft Acquisitions

Pakistan thus faced a growing Indian airpower capability; not only was RPAF considerably smaller in size, but the disparity also became greater when supporting infrastructure was taken into context. The effects of this disparity were most apparent when shortly after independence, RPAF found itself almost helpless in supporting ground forces in the first Kashmir war. At the time, RPAF could muster some supply dropping missions using its limited Dakota fleet and then had to resort to night supply dropping missions in the face of RIAF's offensive counter-air capability. The need to build up Pakistan's military aviation capacity became apparent quickly. RPAF, in the first instance, looked for additional aircraft of various types accompanied by parallel efforts for a local training and maintenance infrastructure. These imperatives notwithstanding, RPAF's growth plans needed to account for Pakistan's limited resources at independence. The new state of Pakistan had an underdeveloped industrial sector, a precarious balance of payment position compounded by a weak administrative machinery. All of these factors combined to constrain the country's economic capacity.

As mentioned in the previous chapter, the Pakistani officers joining RPAF had given some thought to its expansion once the country gained independence. Post-August 1947, RPAF's growth plans were laid out as Target I, II, III, and ultimately Target IV, as described previously. Besides aiming to achieve these targets, the planned acquisitions needed to account for demands created from the normal attrition of daily peacetime flying and other operations such as counter-insurgency. During the first year of RPAF's creation, a disagreement arose regarding how RPAF's growth should be structured. In July 1948, Air Vice Marshal Perry-Keene took medical leave and appointed Air Commodore M.K. Janjua as the acting Air Commander, the senior Pakistani officer at the time. During this time, the Indian actions against the state of Hyderabad and other disputes changed the threat perception of the Pakistani government, which believed that Pakistan could very well be on India's target list. The government directed an aggressive build-up of the country's military capacity. The subsequent growth plans called for an increase of four and a half fighter bomber squadrons over what was envisaged by Target II at the time (which called for two fighter-bomber squadrons, including 32 fighter aircraft). This increase was to be achieved by March 1949. The aggressive plan may have been influenced by Air Commodore M.K. Janjua's view that


This Tempest II aircraft is from the batch of refurbished aircraft bought from the UK. These aircraft were the first to carry desert camouflage, a scheme also adopted by the RPAF for most of its Fury aircraft. This aircraft, A132, was possibly serving with No. 9 Squadron at Peshawer at the time. (Fred Issacs)


Refurbished RPAF Tempest II. Shortly before delivery, the first aircraft of RPAF's first 'acquisition'. The aircraft was in desert camouflage. (C. Thomas via F. Grabowski)

Another aircraft of the refurbished Tempest II acquisition; a new-looking Tempest II from the batch showing the desert camouflage pattern from the port side. (PAF Archives via F. Grabowski)

the existing plans were not sufficiently ambitious. This view was perhaps also coloured by his experience of colonial rule; the Air Commodore firmly believed that under senior RAF commanders, an independent nation's aspirations for its armed forces could not be met. The countervailing view emphasised the need to gradually develop an infrastructure to support an expansion and progressively create a credible and sustainable force. Air Vice Marshal Perry-Keene considered these aspirations a "tout le monde au battile – everyone in battle" as there was no maintenance or trained manpower backing for the more ambitious growth plan. Subsequently, this aggressive planned development did not materialise, and the view prioritising raising sufficient training institutions to create manpower qualified to man an air arm prevailed.

The Operational Requirements Committee set up to assess suitable aircraft for RPAF's needs decided to minimise the number of types in RPAF service. It also decided to defer a complete switch to jet aircraft as that would have been a step too far for the nascent air force, given its technical resources. For an initial period, piston-engine fighters were to form the core of RPAF's fighter strength. The most natural source for additional fighters was the United Kingdom; given RPAF's heritage, its RAF-seconded senior command and existing equipment. The other possible source was the United States. As part of the initial attempt, a personal emissary of Mr Muhammad Ali Jinnah (Pakistan's founding father and first Governor-General) was sent to Washington in September 1947 with a request for a US $2 billion loan spread over 5 years.[3] Out of this loan, $75 million were requested to be earmarked for the needs of the RPAF. This amount was required to equip 12 fighter squadrons in addition to trainer aircraft and numerous ground support facilities. The United States, however, was reluctant to supply military equipment to Pakistan at the time and initially even refused to provide trainer Harvard aircraft, given the possibility that these aircraft could be armed.

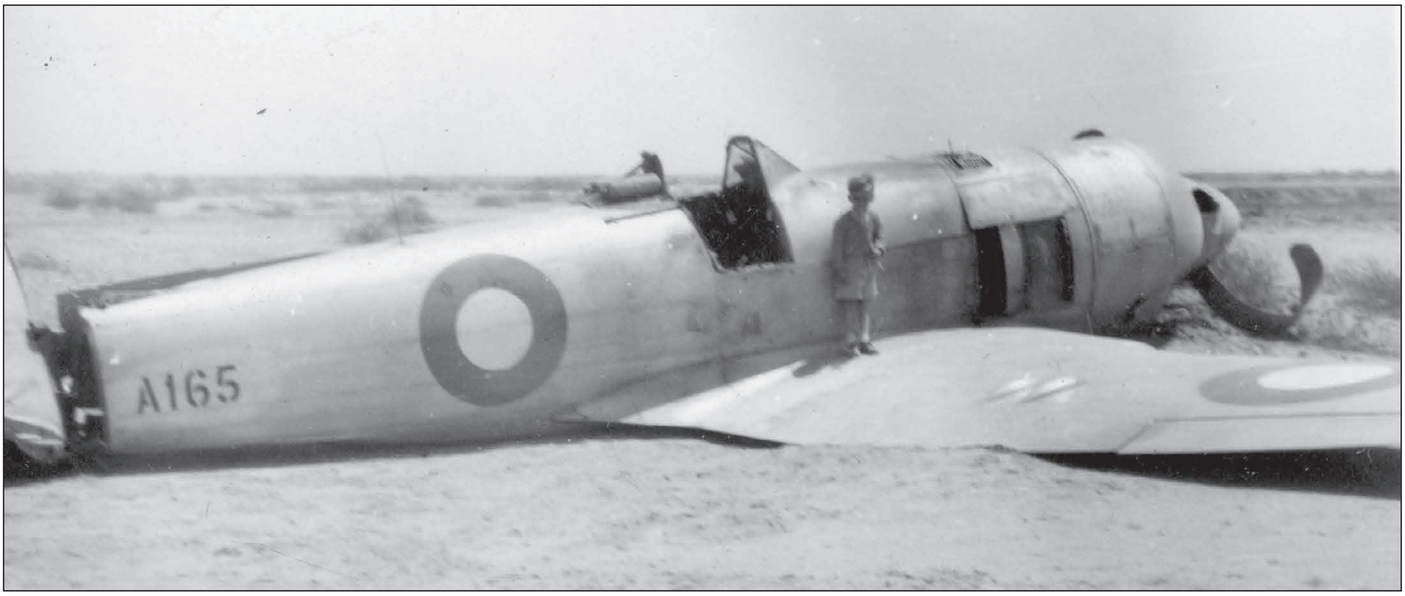
Records slightly differ concerning the exact number of Tempest II aircraft inherited by RPAF. The official history mentions 32 aircraft, while other sources mention 35 aircraft transferred to Pakistan on 25 September 1947 (see preceding chapter for status as of 31 March 1948).[4] The higher number may include some unserviceable airframes, which could have been struck off charge immediately, thus explaining the smaller total mentioned in the official history. These Tempest IIs were ex-RAF stock and for an initial period continued in the RAF camouflage of dark green and ocean grey with medium sea grey under surfaces, with RPAF markings of green and white roundels and crescent and star fin flash in green and white. The aircraft carried serial numbers from A100 onwards; at a later date, the aircraft were repainted in a 'desert' scheme of dark earth and middle stone pattern with azure blue undersides. RPAF markings allowed optional chevrons on the fuselage near the tail and on the top and bottom of wings near the wing roots (possibly to distinguish from RIAF Tempests). Later RPAF aircraft also used individual letters on the sides of the fuselage, and squadron markings just below the canopy were applied. However, no photograph of a Tempest II aircraft with these markings is available, which started appearing a little later with Fury aircraft.

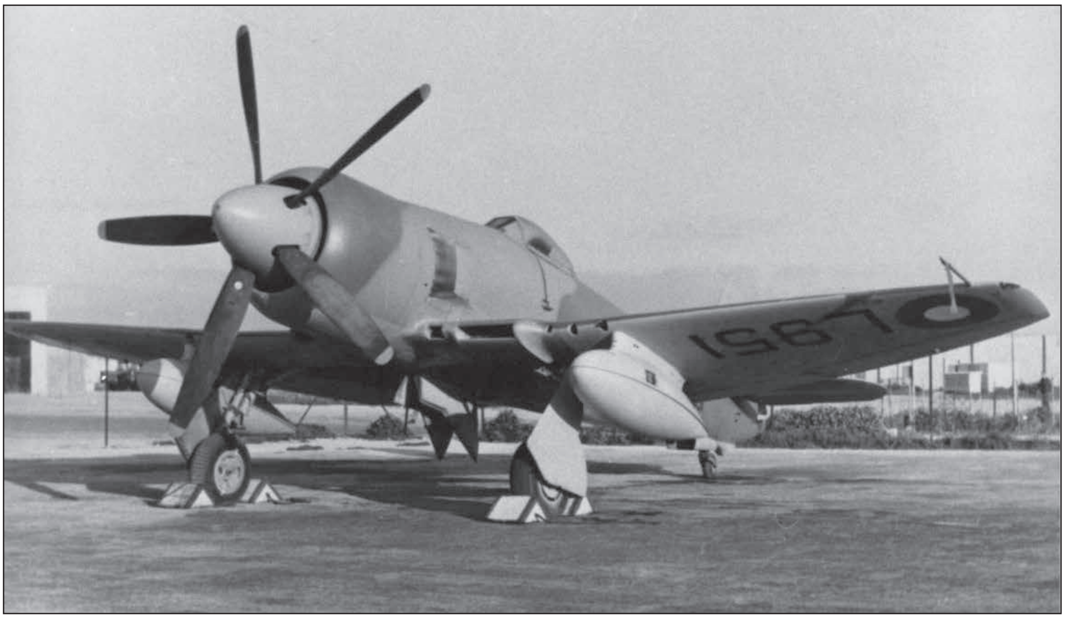
RPAF looked at purchasing further refurbished Tempest IIs from ex-RAF stocks to maintain its strength in the face of attrition. Initially, an inquiry for 75 additional Tempest II aircraft was made, which was later reduced to 34 aircraft, including the possibility of converting 10 of these aircraft to dual-seaters.[5] Finally, an order for 24 aircraft was placed, refurbished in the UK, and delivered starting in 1949. These aircraft now carried the standard RPAF desert camouflage of dark earth and middle stone and were allocated serials A128–151.[6]

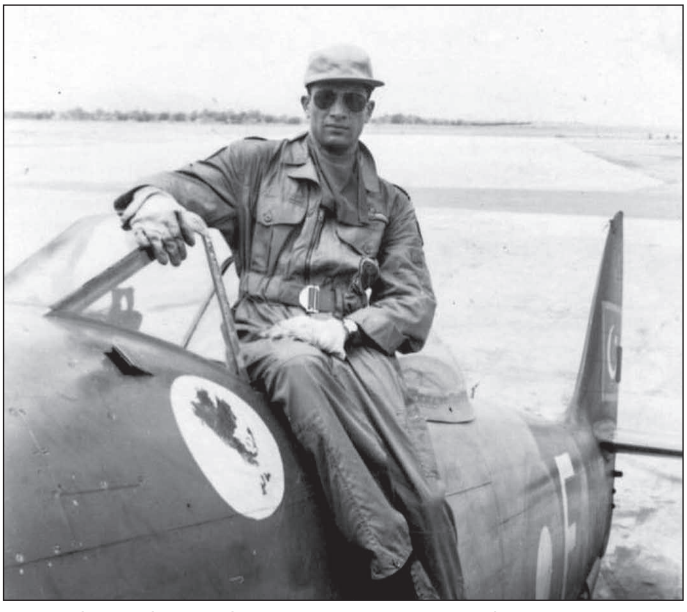
Later on, delays in delivery of Fury and Attacker (see later in this chapter) aircraft forced RPAF to look at additional second-hand Tempest II aircraft until sufficient deliveries of Furies and Attackers could be made. Air Ministry files quote the RPAF Air Commander's expectation that he would run out of reserve Tempest II aircraft by June 1951 based on anticipated wastage in training and the squadrons. Reserves of Furies to back the existing two squadrons were expected to be exhausted by October 1951. By April 1951, RAF determined that with 33 Squadron Far Eastern Air Forces' re-equipment, Tempest IIs were surplus to RAF needs. Besides these, an additional 40 unserviceable and three serviceable aircraft held in the UK could be released. Since India's long-standing bid for 12 unserviceable aircraft for maintenance purposes had been met, the aircraft were available for other bidders. At the same time, the Government of Pakistan had approved RPAF's purchase of 24 of these aircraft plus spares as available. The cost of these aircraft (without refurbishment, spares, and transport/flight deliveries of the same) was quoted at £6,000 per aircraft.[7]

Shortly later, RPAF decided to procure these aircraft. This purchase turned out to be less than prudent for the service, as can be seen from this narration by Wing Commander. S. M. Ahmad (popularly known as Lanky Ahmad) one of the pioneering transport pilots of RPAF:

> In the early fifties, the PAF was short of pilots and aircraft. The government purchased a few old Tempest aircraft from the Royal Air Force in Singapore. During the last week of December 1951, I was detailed to fly there, for the first time in a Bristol Freighter. The passengers were Squadron Leader Zafar Chaudhry, Flight Lieutenants. Boss Ahmad, Gully Haider and some technicians to service the three second-hand Tempests.
>
> We left Lahore on the 26th of December and arrived at RAF Sletar Air Base on 28th December after making a night stop each in Dacca and Bangkok. All this happened soon after Christmas and before New Year's eve. In the bargain, we had a wonderful rest and recreation at Singapore, a small beautiful island. We purchased some wooden carved decoration pieces made from the walnut tree. These artifacts do sometimes bring back the memories of that fateful trip.
>
> On the 2nd of January when the RAF base came to life again, the three pilots were shown the rusted and neglected aircraft. These had been lying for a long time in the open, under torrential rains and scorching heat. I could see the immediate reaction of our most experienced fighter pilots, who were told by our British colleagues at Peshawar Air Headquarters that the aircraft had flown only a few hours and were in good flying condition. The next five days our technicians, along with the RAF ground crew, cleared and serviced the aircraft and declared them airworthy late in the evening of 7th January. Since we were already delayed, a quick air test was planned just before the departure the next morning. Luckily, all the engines started, the three aircraft got airborne and landed back safely without any serious defect.
>
> My crew members Flying Officer Syed, the Navigator, and Sergeant Khan, the Signaller was all set to get a thumb sign from the leader of the Tempests aircraft for the first leg to Penang Airfield (Malaysia). When all the three fighter aircraft took off, the Bristol Freighter with the maintenance crew immediately followed them and flew as fast as permitted by the manufacturers to land there soon after.

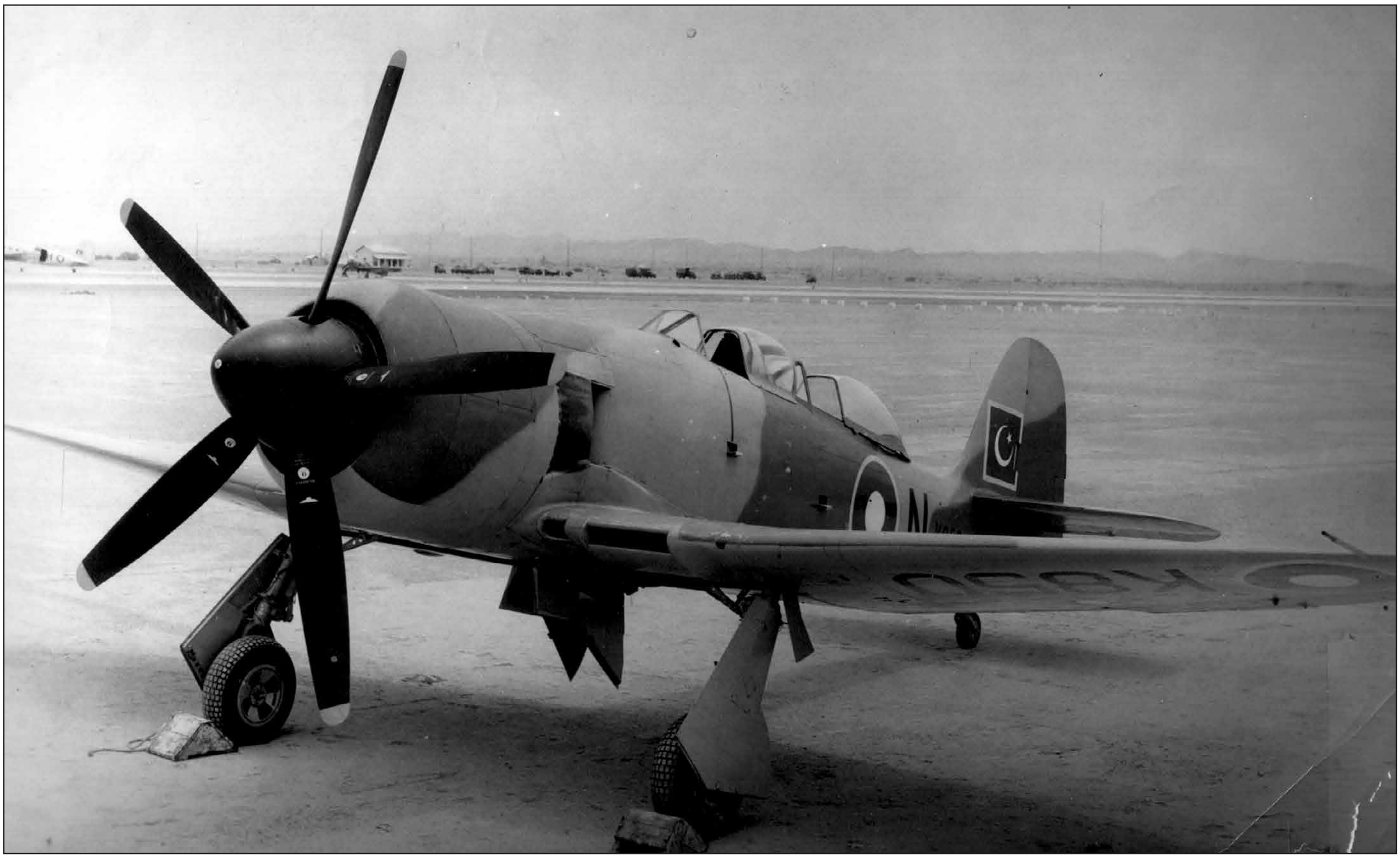

A crashed Tempest II from the last batch purchased from RAF stocks in the Far East. (Jacek Stanski via F. Grabowski)

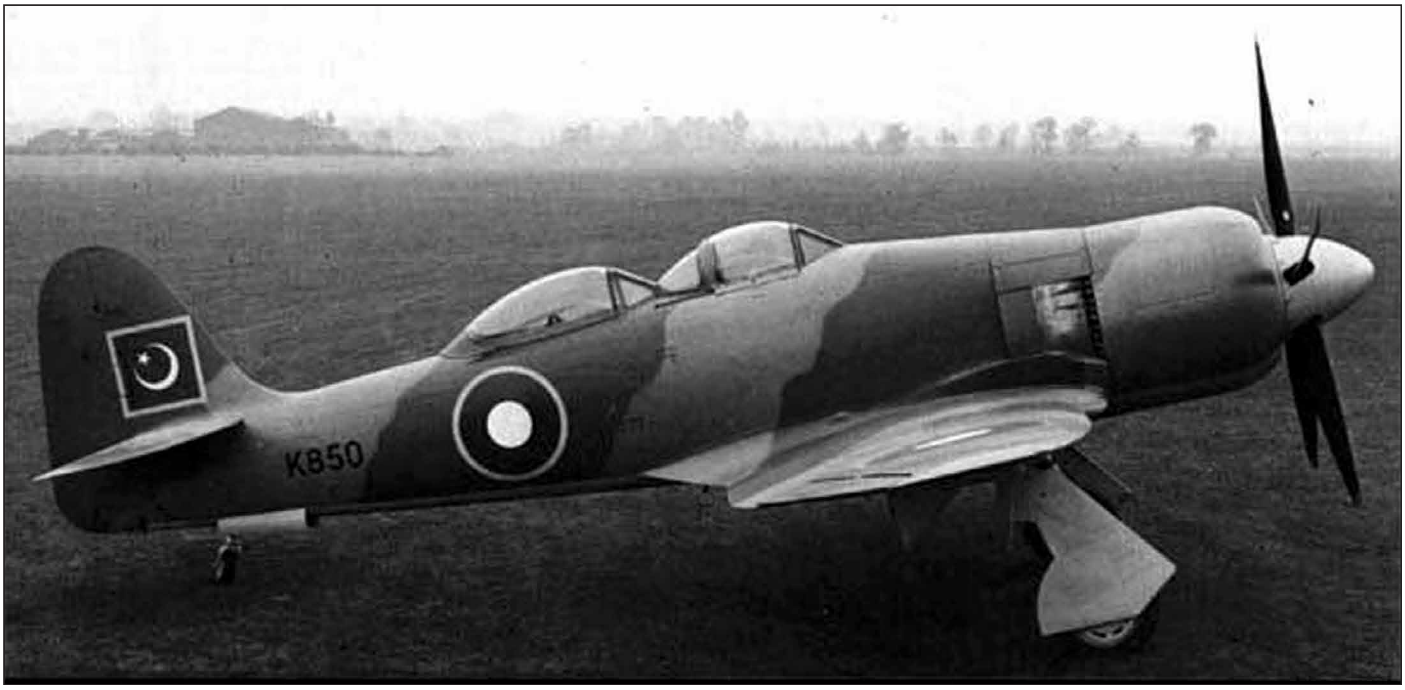

A Fury in the desert camouflage. (Farial Sikander)


Fury with squadron markings. Over time RPAF squadron insignia were painted just below the canopy; visible here is an example with No. 9 Squadron markings. (Farial Sikander)

Over the Penang Airfield, we could see an aircraft had overshot the slippery runway, mainly due to the rain, and was lying nose down in tail up position. We got permission to land on the alternate but shorter strip and soon reached the scene of the accident. Zafar Chaudhry was bleeding from the wrist and the mouth, his head was down and the legs were up. The RAF rescue team was busy sawing the fuselage and window to get him out as soon as possible. When they wanted to cut his straps and remove his flying boots, he shouted that he would rather 'die with his boots on.' We were happy that he did not lose his sense of humour even at that hour of agony. With great difficulty, we managed to get him out of the aircraft. After a shot of morphia, he was carried to the ambulance, I and other two pilots accompanied him to the hospital. After the surgery, his wrist was bandaged and he felt better. When the doctor told him that he had to stay in the hospital for a few days, he reacted strongly and requested them to allow him to fly in the Bristol Freighter on a stretcher. The doctor reluctantly agreed, since a day after he would be admitted into the Combined Military Hospital in Dacca in his own country. In Rangoon, the paramedics were on alert to take him to a clinic for a night stop.

On our way to Rangoon, I heard Haider on the Radio Telephony, sending SOS distress messages to the Tavoy Airfield control in Burma for an emergency landing. The aircraft engine had failed and he made a good job putting the aircraft down on a 'dead stick'. We landed soon after him to find out as to what had gone wrong with our second aircraft. The technician declared that the engine had ceased due to an oil leak and it would require a replacement. The Air Traffic Controller of the deserted airfield was pestering us to take off immediately. He was expecting a





One Fury was diverted from the Iraqi order and featured two separate canopies. (Kamal Butt)

guerrilla attack from communist insurgents. We collected the lucky pilot, leaving the aircraft there, and landed in Rangoon, where Ahmad had arrived earlier. The next day we landed at Dacca and left Zafar Chaudhry, in the good hands of his brother Anwar Kahloon.

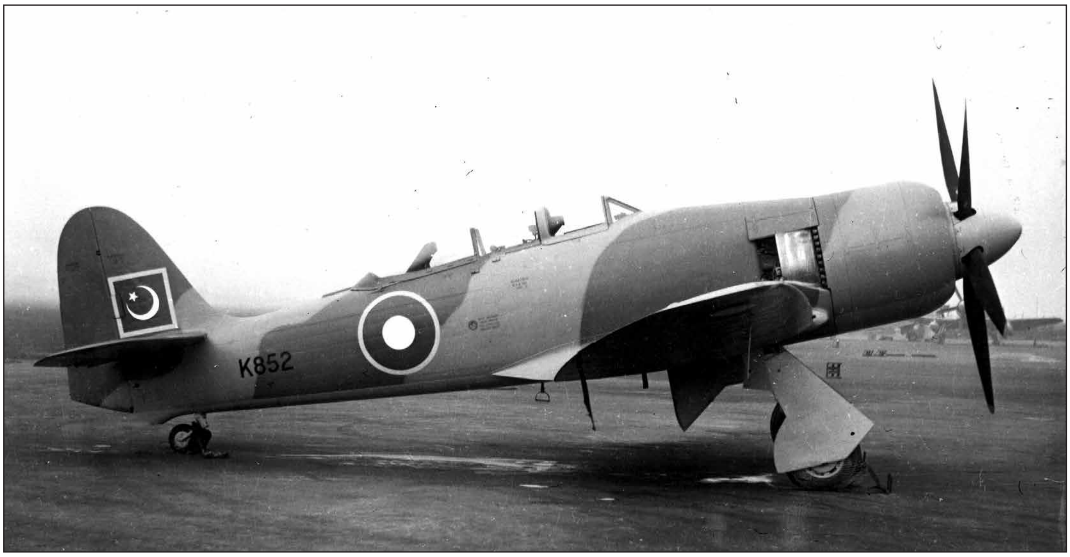
At Lahore, just before landing the pilot of the third aircraft, Ahmad had a near-fatal mishap. His joystick got jammed, and he was compelled to use some extra force with his feet, to unlock the stuck-up position of the elevator. The aircraft was repaired and cleared as airworthy after one month. Flying Officer Baldy Chowdhry flew it to Karachi for its final destination. On his final approach at Mauripur, the engine stopped working. He undershot the runway and was badly injured and remained in the hospital for three months. After a short period, he bade farewell to the PAF joined the PIA (Pakistan International Airlines) and retired as a Captain of Boeing 747. I was detailed to carry out an inquiry into the accident. I happened to have some experience on the Tempest aircraft and had first-hand knowledge as to what had happened since the ferry flight left Singapore. The result of the investigation was simple and easy to compile,

(i) that the aircraft had not been flown for about 2 years,

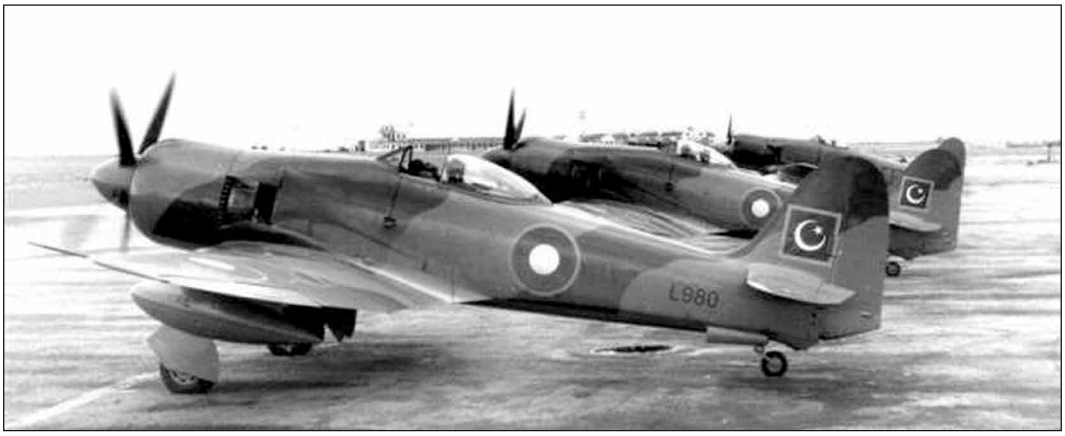
(ii) that the pipes and hoses got so brittle and old; they easily gave in after some flying,

(iii) that the reason for the engine failure near the Tavoy Airfield, was also the leaking of oil.

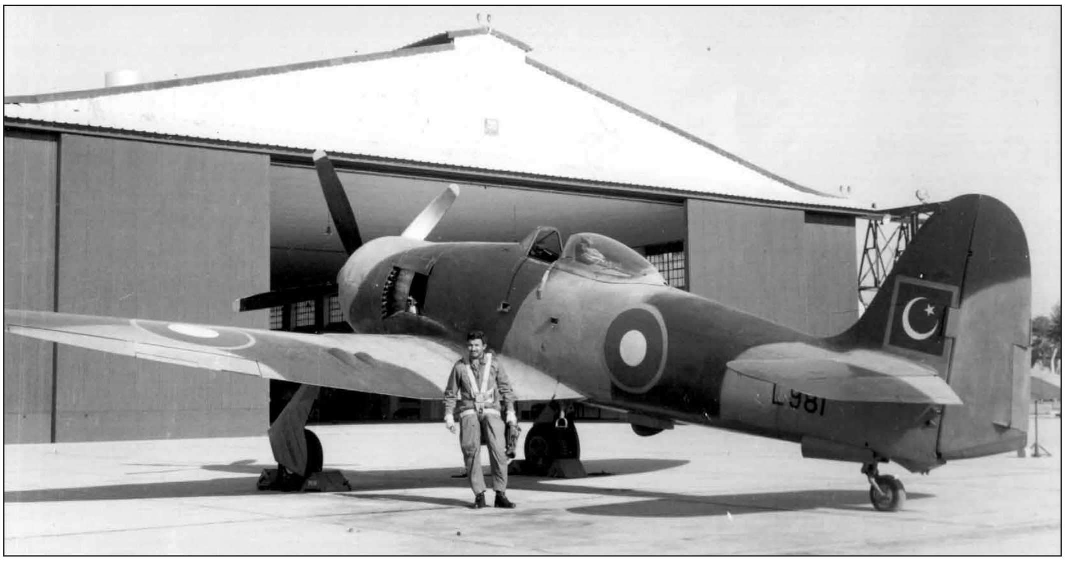
This was a sad story because of a misunderstanding or carelessness involving some senior British officers working with the PAF, who made a bad deal with their RAF counterparts in Singapore. The appropriate action should have been to send a team of engineers for the acceptance or otherwise of these aircraft before detailing three senior pilots who nearly got killed.[8]



The other dual-seater Furies operated by RPAF had the two canopies connected via a Perspex tunnel. (Kamal Butt)



A later Fury delivery can be distinguished with the change in a camouflage pattern. (Kamal Butt)

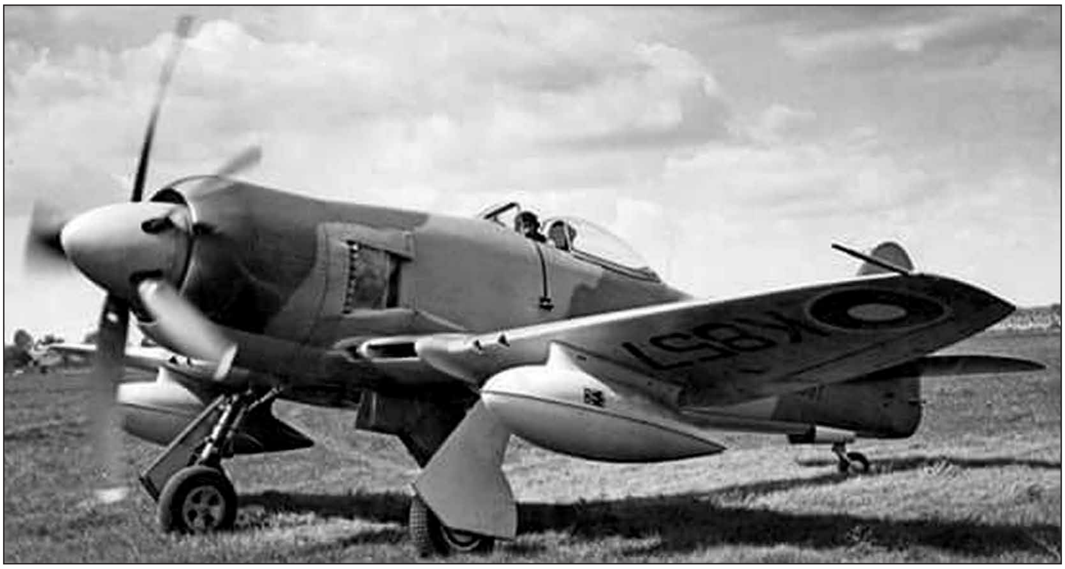


Fury FB.Mk 60 with Masroor Hussein, who would later command PAF Base Mauripur. He was killed in a B-57 crash while serving as the base commander of Mauripur, and the base would be renamed Masroor in his memory. (Kamal Butt)

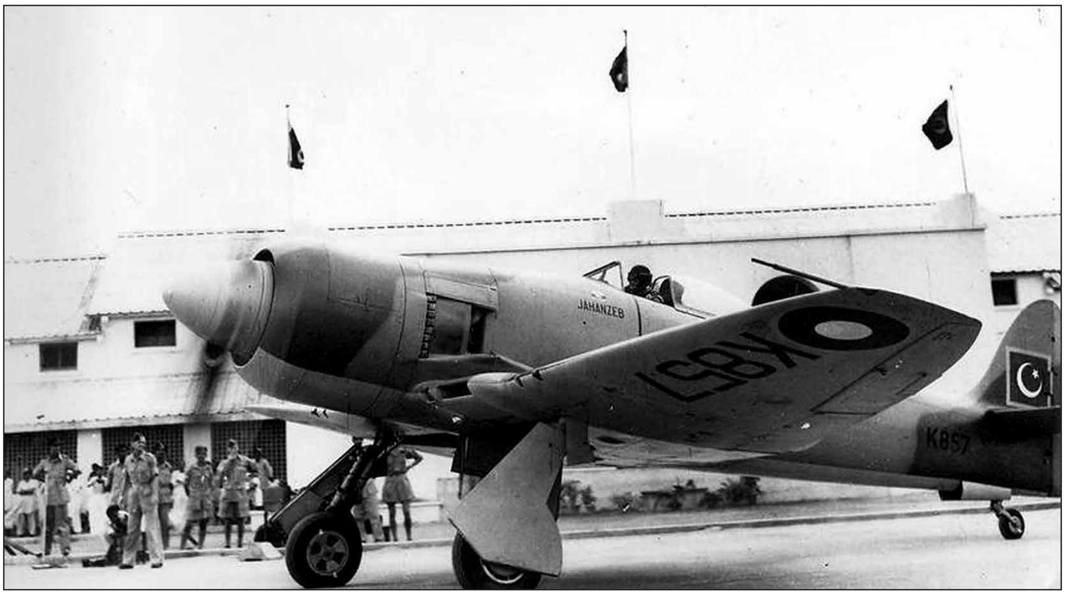
Hawker Tempest IIs were introduced in the later stages of the Second World War. They were considered successful in combat and compared well with contemporary types like the P-47 Thunderbolt. During the last phase of the Second World War, a further development of Tempest IIs aimed at enhancing the performance of the successful design was underway. This requirement developed into the Fury/Sea Fury aircraft using the 2,480 hp Centaurus XVIII engine. With the war's end, the RAF withdrew from this program as it obviously would not need the same number of aircraft, and besides, jet-engine powered aircraft were considered the future of military aviation. The Royal Navy nevertheless continued with the program as it was felt that carrier-based aviation needed to rely on piston-engine aircraft for a few years before a transition to jet aircraft on aircraft carriers could be made.

For RPAF, selecting Fury aircraft to augment the existing fighter aircraft fleet was an obvious choice. Fury was the most advanced piston-engine fighter available then and had essentially the same engine as the Tempest II (for which maintenance infrastructure already existed in the country). Further, the transition to jets was a bit too early. In the RPAF service, the Tempest II and Fury aircraft were considered substitutes for each other in an operational sense. However, most pilots preferred the Furies, given the Tempest IIs in service had started showing their age. Furies were also faster and had a better rate of climb than the Tempests, though the latter's lower wing loading could be to its advantage.

RPAF placed an order for 50 de-navalised new single-seat Fury aircraft and five dual-seater aircraft.[9] The first new aircraft to be



The NX802 prototype of Fury delivered as K857 to RPAF. (Kamal Butt)



NX802 was delivered as K857 and named 'Jahanzeb' in RPAF. The name can be seen just below the canopy and was added for the induction ceremony. (Kamal Butt)

delivered to RPAF in late 1948 was a dual-seater flown by Hawker pilot W Humble and RPAF's Flying Officer Hussein. The duo took the route UK to Rome, Athens, Cyprus, Habbeneyeh, Sharjah, and finally to Karachi, the ferry was completed in 17.5 hours.[10]

Per United Kingdom's Ministry of Supply directives, export variants of military aircraft were given distinguishing Mark numbers. The Fury fighter-bomber variant delivered to Pakistan was designated as Hawker Fury FB.60.[11] RPAF also acquired dual-seater Furies and operated two variants of the dual-seater. One was the same variant as provided to the Iraqi Air Force with two separate cockpits hoods (T.61 variant); the other variant (T.20) had a Perspex tunnel connecting the two hoods. The T.20 variant's rear cockpit had a gunsight for the instructor, this sight was electrically connected to the student's gunsight in the front cockpit. A detachable forward-inclined mirror with a gunsight's reflector formed a periscope allowing the instructor to adjust the aim during armament practice. This feature obliviated the need to raise the rear cockpit of the design and therefore avoided possible aerodynamic penalties. All RPAF variants differed slightly from the naval version of the Fury design including the absence of a wing fold mechanism and the arrestor hook.

The first contract for Furies was No. 2759/49, under which 50 aircraft with serial numbers L900 to 949 were delivered. A further 24 aircraft were delivered during 1951 under Contract No. A.1439/PR.8533 dated 23 January 1949, and 13 single-seaters were delivered during 1951–52 under Contract No. A.1782/PR 9210 dated 21 February 1951. A further five Sea Fury conversions (de-navalised) were delivered during 1953/54 under Contract No. A3904/PRE.1434 dated 8 August 1951.

The dual-seaters were delivered under Contract 2795/40. An additional dual-seater Fury was diverted from an order of these aircraft by Iraq.

A Fury prototype NX802 was sold under Contract No. 3279/PR2259 dated 31 March 1949.[12] William Humble, earlier a test pilot with Hawker Siddeley Aircraft, recalls:

> I was a sales manager at the time, and from my office, I saw one of the prototype Sea Fury aircraft, the 802, sitting outside in the long grass. I got hold of our contract person and asked him about repurchasing the aircraft from the Ministry. We did and paid something like 250 pounds, then I rang up the Air Attaché or Air Liaison officer of PAF in London and asked if he would like to get a Fury cheap. He asked what you meant by cheap, and I said how about 10,000 pounds delivered to Karachi. He said he would check, he came back and confirmed in the affirmative. We gave it a coat of paint, and Neville flew it for the record-breaking single-engine piston flight to Karachi.[13]

This Fury delivery is the one that created a speed record in May 1949 with pilot Neville Duke at the controls on this delivery flight to Pakistan, completing the 3,921 statute miles between London and Karachi at an average speed of 256.1mph. The Bristol Aeroplane Company proudly advertised the event announcing that 4,492 miles were completed in 15 hours 20 minutes which was 3 hours and 54 minutes faster than the previous best time held by a four-engine aircraft. For London to Rome leg of the journey, the was 2 hours 32 minutes and 58 seconds – 18 minutes faster than the previous record held by a jet engine aircraft. This aircraft, delivered as serial number K857 to RPAF, was christened 'Jahanzeb,' which was the name of Wali of Swat's son (ruler of the princely state of Swat in Pakistan), who had donated a sum of 200,000 Pakistani Rupees for the aircraft. The aircraft was inducted in a ceremony attended by the Air Commander Air Vice Marshal Atcherley and Begum Rana Liaquat Ali Khan (wife of Pakistan's first Prime Minister and a prominent political leader of Pakistan's independence movement in her own right). Pictures from the ceremony clearly show 'Jahanzeb' painted on the port side just below the cockpit, while ferry pictures of K857 show the aircraft without this marking.

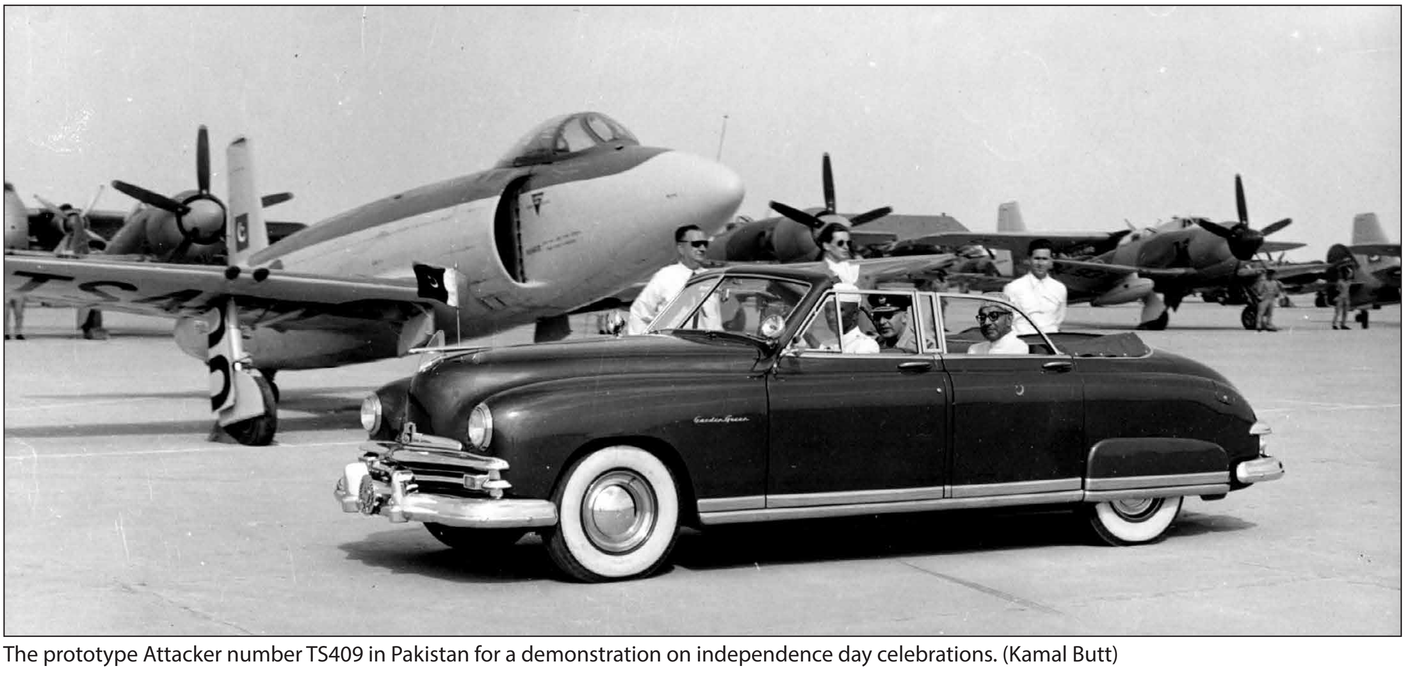
These aircraft served various units initially in front-line service, fighter conversion, and later with the induction of F-86 Sabres and F-104 Starfighters in secondary duties like target towing. The first batches of these aircraft carried the standard desert camouflage. Later Fury deliveries would see aircraft painted in RAF Day Fighter and Long Range Intruder schemes with Dark Grey and Green patterns on top and blue undersides. Photographic evidence shows Furies also started carrying squadron insignia and individual code letters. The single-seat Furies were numbered from L900 to L991 with the exception of NX802 which as noted was given the tail number K857. The dual-seaters had tail numbers K850, 851, 852, 853, 854 and 858.

While the acquisition of piston-engine aircraft continued to maintain and enhance RPAF strength and form its core in its initial years, the air force started looking at acquiring jet fighters to remain abreast with military aviation developments worldwide. The advent and maturity of jet engine technology in the later years of the Second World War and the immediate post-war years meant that a nucleus of a jet-aircraft-based force needed to be created. This could then allow RPAF to convert to a whole or primarily jet-aircraft-based fighter force in the coming years. An advisor to the Government of Pakistan, Mir Laiq Ali, had secured Lockheed's interest in supplying F-80 aircraft to Pakistan and possibly setting up a production facility in Pakistan. This option was never exercised and could be because of lobbying by RAF-seconded high command to continue with British aircraft, the difficulties of obtaining support from the United States government, and budgetary and technical challenges of setting up such a facility.

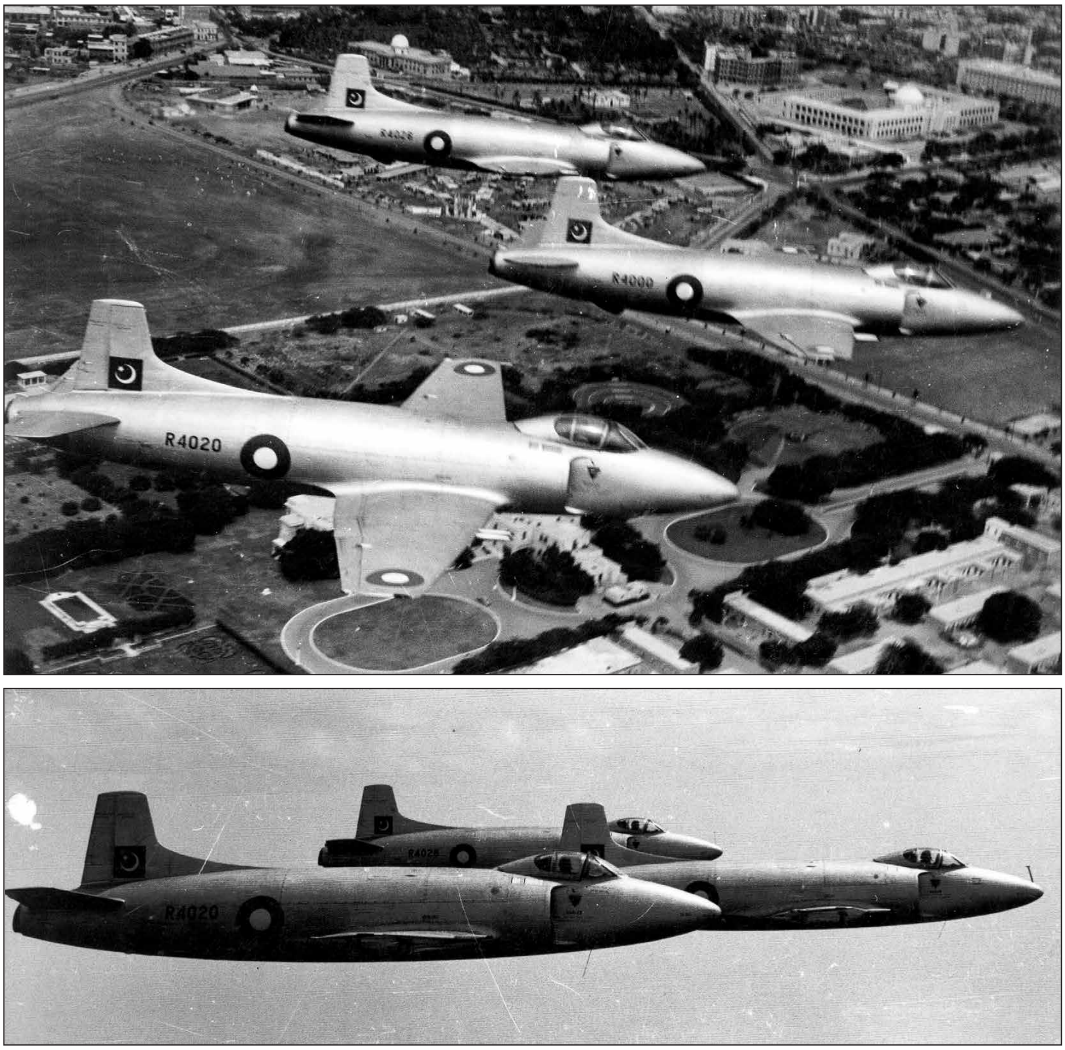
Ultimately, the Vickers-Armstrong Supermarine Attacker aircraft was selected, which was also earmarked for service with the Royal Navy as its first jet-based carrier fighter aircraft. The exact contract price of the aircraft for Pakistan is not known with certainty, but some of the available correspondence indicates that at a stage, a cost of £28,000 pounds per aircraft was discussed.

Les Colquhoun, a civilian test pilot with Vickers-Armstrong, recalls his association with the Attacker aircraft and Pakistan:

> I came into it because we had production orders coming in, and I started to do some development work to get my hand in, so when the production Attackers came along, I could test them. The airframe was a cylindrical tube, but the wings were Spiteful wings of the old laminar flow type. All we did was to put a suitable fuselage in the easiest way possible, which could house the Nene engine. We kept the tailwheel undercarriage which was a strange thing to do, but this had its advantage as a naval airplane. But it was very much an experimental airplane for Vickers to gain experience with jet engines, which was its primary purpose. That it became a naval fighter was secondary and showed the gathering pace of the need to have jet aircraft in the service with RAF/RN (Royal Navy) and to catch up with what was happening in America. It was a good airplane but had its faults and experienced some mysterious accidents. We lost one of our test pilots, Peter Robarts, when flying one of the early production Attackers. He seemed to dive virtually into the ground from thirty thousand feet, and nobody understood what happened. One year later to the day and almost to the hour, a naval pilot at Boscombe Down was doing a circuit, and his nose started going up and down, and then he nosed over and flew into the ground, and again, that was very difficult to understand. Three years later, certainly to the day and almost two hours earlier, another Attacker was lost with the loss of the pilot, and again through challenging to understand circumstances … the aircraft certainly did a good job in the navy; it introduced them to the jet, it was not an ideal airplane, RN liked the Hawker variant (referring to the Sea Hawk) when it came along, but the Attacker was a good in-between airplane, those naval pilots that flew it liked it … unlike the propeller aircraft, which generated a strong slipstream force and gave you a better feel of control over the rate of descent, the early jet engines were slow to respond. When you took power off, it was slow in decelerating; similarly, when you gave power, the engines reacted slowly. This meant that the control over the rate of descent and climb of the aircraft was less precise; the spoilers helped to control the speed and the rate of descent.



The prototype Attacker number TS409 in Pakistan for a demonstration on independence day celebrations. (Kamal Butt)



An Attacker formation including R4000, the first Attacker delivered. These photographs were taken by F.S. Hussein. (Zahid Hussein)

> I was test flying the first production aircraft, and there were some visitors at the airfield. I was asked to do a flypast across the airfield and flew it to 500 knots at 300 feet. As I went across, the starboard wing folded up, which meant a third of the wing was vertical. I managed to land the aircraft, and it was found that there was a fault with the machining of the locking plates for the wing fold; there was no other such case in flying of Attacker. Later, a naval pilot lost his life because his wings folded up on take-off, and it was found that the wings were not appropriately locked; there was a definite reason for that incident.
>
> Sold a whole lot of Attackers to the Pakistanis, who wanted them to carry bomb racks, something the navy had not thought of, so they also became attack aircraft. There was no need for a wing fold, and the wings were locked permanently.
>
> That contract went very well. All were delivered; Dave Morgan took the prototype TS409, which was not supposed to be for RPAF, for a demonstration on the country's independence day celebration. On the ferry flight, landing at Baghdad, his undercarriage collapsed, and I had to fly a Viking with mechanics to do the repairs. He was then able to fly to Pakistan and did a successful demonstration. A month later, I took the first production aircraft, R4000, through Nice, Nicosia, Baghdad, Bahrain, Sharjah, and finally to Mauripur. Expecting a crowd to welcome me, I only saw the company's agent, mechanics, and an immigration man who sprayed me with a chemical to disinfect and made me sit in the cockpit and close the canopy. I thought I flew at 30,000–35,000 feet which would have killed all the bugs anyway. The company's agent told me I had to fly the aircraft back, which I could not believe. I went with the company's agent to Karachi and had some beers. The following day, I was summoned to the Air Commander's office and saw Air Vice Marshal Atcherley at his office. He had a huge office and a wide carpet; I was almost lost. Atcherley looked me up and down, saying, "Les, you have to take it back. We want this and that done, and you do not have any other ready; when is the second one coming?" I said, in all honesty, I do not know, and Vickers is quite behind in production. The Navy is pressuring them to concentrate on their order, which could be quite a while. He said, in any case, bring a new aircraft next time, and I said, what do you mean? This aircraft is brand new, with the only hours flown being testing-related and for the ferry flight.
>
> In any case, the aircraft was without the bomb rack modification that RPAF had demanded; neither was testing done for the same, so it was a naughty play by Vickers but could be justified that in time the aircraft with due modifications would arrive. The discussions continued for about three months, and I eventually ferried the aircraft back in time for Christmas. It was an unfortunate start, but ultimately, the aircraft were delivered, and when the Pakistanis received the aircraft, they were happy with it. They were quite skilful pilots.[14]

RPAF became the sole export customer of the type, operating the de-navalised version of the FB.2 mark. The variant lacked the wing fold of the Royal Navy's Attackers and could carry both bombs and rockets. RPAF purchased 36 of these jets in what was at least in later years a controversial acquisition. The Attacker was the only fighter jet with a tailwheel. As the excerpt above indicates, its wing was adopted from the Supermarine Spiteful/Seafang designs meant to replace the famous Spitfire, though those designs never entered service. The decision to use the tail wheel arrangement and already developed wings was driven by the possibility of reduced development time and costs. The Attacker thus carried its four 20mm cannons in the wings, which prevented gas ingestion in the engine when guns were used, a problem faced by most jets that carried guns in the fuselage. It has been said that physical stress caused by air combat could result in the wing flexing, twisting, and distorting gun alignment, which is unsuitable for an aircraft that relies on guns as its main armament. While the Royal Navy adopted the aircraft, the Royal Air Force did

R4032 was among the last batch of Attackers delivered to Pakistan. (Kamal Butt)

R4003, one of the initial deliveries of the Supermarine Attacker. (Farial Sikander)

not see the design as providing any substantial improvement over its current jet fighters and never acquired the aircraft. The design did not have a remarkably successful career with the Royal Navy either, operating only from aircraft carrier HMS *Eagle*, and being withdrawn from service after only a few years. Later accounts of RPAF pilots who flew the type are also almost unanimous in their dislike of the aircraft.

The first Attackers for RPAF arrived in the summer of 1951, with serial numbers R4XXX in sequence starting from R4000. Pilots operating Fury aircraft were posted to the reactivated No. 11 Squadron for conversion to the country's jet fighter aircraft.

Flying Officer Fred Issacs of RPAF, who was among the first pilots to fly these jets operationally, narrates this experience:

> … The first few arrived in the summer of 1951, and No. 11 Squadron RPAF was activated under the command of Squadron Leader A.R. Khan, with Flight Lieutenant F.S. Hussain the flight commander. Pilots picked from the Fury squadrons began to arrive at Station Mauripur in July and August. From 9 Squadron, Flying Officer Trevor Gotting arrived first, followed shortly after by Flying Officer 'Dan' Durrani, Fred Isaacs (writer), and 'Jan' Janjua. Flying Officers Alam, Ghulam Haider, and 'Lucky' Hyatt Khan also joined from the other two squadrons. Four days after receiving my posting signal at Miranshah, I had flown my first jet fighter.
>
> Our check-out was conducted by Vickers test pilot 'Pee Wee' Judge. It was simply being handed a copy of Attacker 'Pilots Notes' to read, being asked if there were any questions, and then into the cockpit to fly. There was no special protective gear available or issued at that time; you flew with what you had. The pulling of the ejector seat safety pin before a flight and reinstalling it after was an important checklist item. Taxiing was a bit tricky on this tail-wheeled jet aircraft, learned on the way to the runway, but the flying itself was easier than pistons with far better visibility without a huge engine and prop disc in front, no torque to contend with or propeller controls to operate. We were current and experienced fighter pilots however, and the conversions went without a hitch.
>
> As soon as the first six Attackers were available for flying, the squadron with the radio call sign 'Paybill' (A.R.'s choice) was relocated to Drigh Road. To accommodate us several prime rooms in the quarters near the mess facility had to be vacated by Brits with much grumbling, accustomed to having the best …[15]

The contract stipulated delivery of the aircraft to Karachi, and over the years, Vickers pilots ferried the aircraft from the United Kingdom to Karachi. Since the deliveries spanned over almost two years and Vickers pilots converted RPAF pilots in Karachi, some ferry missions were flown by RPAF pilots. The last batch of RPAF Attackers was handed over to Pakistan on 6 March 1953 at a ceremony at the Supermarine Division's factory at South Marston in the UK, complete with aerobatics performed by company pilot G.J. Horne in the Attacker with tail number R4032. Vickers, at the time, was hopeful of a follow-on order of its swept-wing Swift fighter jets, a possibility quashed in the following months given the availability of American aircraft under the United States' Mutual Assistance Program to Pakistan.

With the arrival of Attackers, a maintenance setup for jet aircraft was also needed. A Gas Turbine Section (GTS) was established at

102 MU (Maintenance Unit) at Drigh Road to repair and overhaul the Attacker's Nene engine. Air Commodore K. M. Ahmed was selected in early 1952 to proceed to the United Kingdom to receive specialist training in jet engine overhaul for this purpose. At the time, no such facility existed in India, the Middle East, or Central Treaty Organization countries. It was, therefore, considered a big step as Pakistan was the first country to develop such a facility with the help of Rolls-Royce. The project started in January 1952 and was completed by September 1953. In the words of Air Marshal Sheikh M. Saeed:

> GTS was the first step in the modernization of the depot, and it brought new technology in the form of jet engines and repair/overhaul techniques, particularly in the recovery of engine parts through repairs, machining processes, and inspection methods. However, we faced problems moving from the piston-engine era to the jet engine phase. Even for the installation of air conditioners in fuel component test shops, authorisation was needed. Instead, there was an established scale by our Base Supply Officer to supply ice to cool the room temperatures. The shop (Senior Non-Commission Officer) caused hold-ups in the testing of oil hoses because he wrongly read the atmosphere scale on the gauge of our Hose Testing Machine and thought it was not giving enough testing pressure. He did not know that one Atm (atmosphere) was equivalent to 14.7 lbs/square in or could have read the lbs/sq in scale also shown on the gauge. The Rolls-Royce Rep came running to me in the heat of summer, saying he could not interpolate the high temperatures noted during fuel testing as Rolls-Royce did not provide tables above 30 degrees centigrade. I had to take this work home to develop these tables by first determining the logarithmic formula. However, by the grace of God, the first jet engine was overhauled by April 1954, and today 102 MU is handling engines and their associated accessories and saving the country considerable foreign exchange.
>
> The over-haul line was now well set, although some problems would come up now and then. The Rolls-Royce was training some NCOs (Non-Commission Officers) to start jet engines at the test bench. As an NCO advanced the throttles, screeching noises were heard by one and all in the area, and soon it was discovered that the air intake shutters had been left in a closed position instead of open position. Fortunately, no damage was done to the engine except to the metallic air intake shutters. By mid-1955, I had to move next door to the Engine Repair Section (ERS), where Bristol Centaurus and Hercules engines were repaired. ERS had several RAF SNCOs and Bristol Reps. We were interested in replacing these personnel with PAF SNCOs at the earliest and were able to do so progressively through hard work.[16]

A photograph showing Attackers under regular maintenance. (Kamal Butt)

An example of the difficulties with Attacker, here a young Viqar Azeem (later Air Marshal) is seen standing next to an Attacker which belly-landed after an engine failure. (Kamal Butt)

Despite these efforts, Attackers being among the very first jet fighters proved problematic in terms of maintenance, and the availability of the aircraft for No. 11 Squadron remained an issue during the type's brief service with RPAF. Squadron Leader M.T. Khan narrates:

> In 1954, I came on posting for the second time to Drigh Road and this time on Supermarine Attackers of No. 11 Squadron. The Squadron was then commanded by Squadron Leader F.S. Hussain, the most famous aerobatic pilot in PAF's history. After making a great name on

> Furies, F.S. Hussain had fully mastered and dextrously handled the difficult Attacker.
>
> The men of PAF Base Drigh Road frequently enjoyed his hair-raising aerobatics. This was, of course, the lighter side of No. 11 Squadron. The darker side was the torturing part of the Attacker's maintenance. Attackers were Britain's latest jet fighters and were quite a troublesome airplane. A stupendous maintenance effort was required to bring even a few aircraft on the line. I still distinctly remember the Station Commander, Group Captain Cheema, worried about the serviceability of No. 11 Squadron, rushing about on cycle to study the situation. He once sent us a reinforcement in the form of a British Flight Sergeant from 102 MU, which did help us in at least as much as that he brought with him hydraulic pumps from 102 MU. No. 11 Squadron from Drigh Road did produce a nucleus of jet pilots and mechanics for PAF who helped PAF Masroor almost overnight to grow from a scratch force to a force of 10 fighter squadrons. 30 May 1956 was the last day of Attackers. I was the Line Chief, the squadron commander Flight Lieutenant Inam ul Haq (later Air Marshal), was most delighted to hear from me that I had managed to bring six aircraft for him online that day. The flight went very well and at the end of the day, the OC told me, "Sarge! Thank you very much, push the aircraft in and pack up". That was the end of PAF's first jet fighter at Drigh Road. They did a lot of good, but at what cost is only known to the pilots and us their ground crew.

Little is known about how the Supermarine Attacker was selected as RPAF's first jet fighter. It can be argued that other options could have served the air force better. The aircraft's origins lie more in getting Vickers on the path of jet aircraft development, and the shortcuts adopted for its wing design and configuration strongly support this view. The aircraft's minimal service with the Royal Navy and problematic and short career with RPAF clearly shows that it was not a successful operational aircraft. At the time, some jet aircraft were operational, including Vampires and Meteors in the UK, Ouragans in France, and P/F-80 in the US. Whether any of these options were seriously pursued, especially the possibility of acquiring Vampires from the UK is unknown. The argument that India had already acquired the Vampire can perhaps be discounted by the fact that both air forces were already operating a common type, the Tempest II, and were being supplied additional Tempest IIs by the UK. Air Ministry correspondence also indicates that at a particular stage, given delays in delivery of Attackers, an offer for six Vampires was made to RPAF. This shows that the type was not off the table for purchase if RPAF had opted for the aircraft.

The Supermarine Attacker had an unestablished operational track record. RPAF as a force was struggling with issues of inadequate infrastructure, trained manpower, and limited budgets; going for a new aircraft not in significant service was less than prudent. The decision could be explained by the tradition of British colonies being used to support the UK's commercial interests and that this tradition continued even when those colonies had gained independence. With little experience and local capability of running an air force, let alone managing significant acquisitions, the British senior command of RPAF had practically unquestionable authority. This almost unquestionable authority allowed a decision which promoted British commercial interests and treated RPAF's interests being secondary.

The Heavies

As mentioned before, in late 1948, reports of India operationalising a heavy bomber force prompted RPAF to look at similar options. Relying on the stock of B-24 Liberator bombers left behind in India by South East Asia Command and the capacity of HAL, IAF started inducting these heavy bombers in its force and ultimately managed to induct 40 of these aircraft. RPAF felt the need to respond and first looked at acquiring four Lancastrian aircraft (civil version of the famed Lancaster heavy bombers of the Second World War). These aircraft were available in Karachi and were operated by one Mr Sydney Cotton for supporting arms transfers to Hyderabad. The idea was that these Lancastrians could be converted to an armed version and augmented by later purchase of second-hand Lancaster aircraft. This effort was dropped when suitable airframes were not found, and the choice then fell on Halifax heavy bombers, also of Second World War fame. This purchase aimed to pose a deep strike threat to IAF and tie up their defending fighters in disproportionate numbers on defensive deployments.[17]

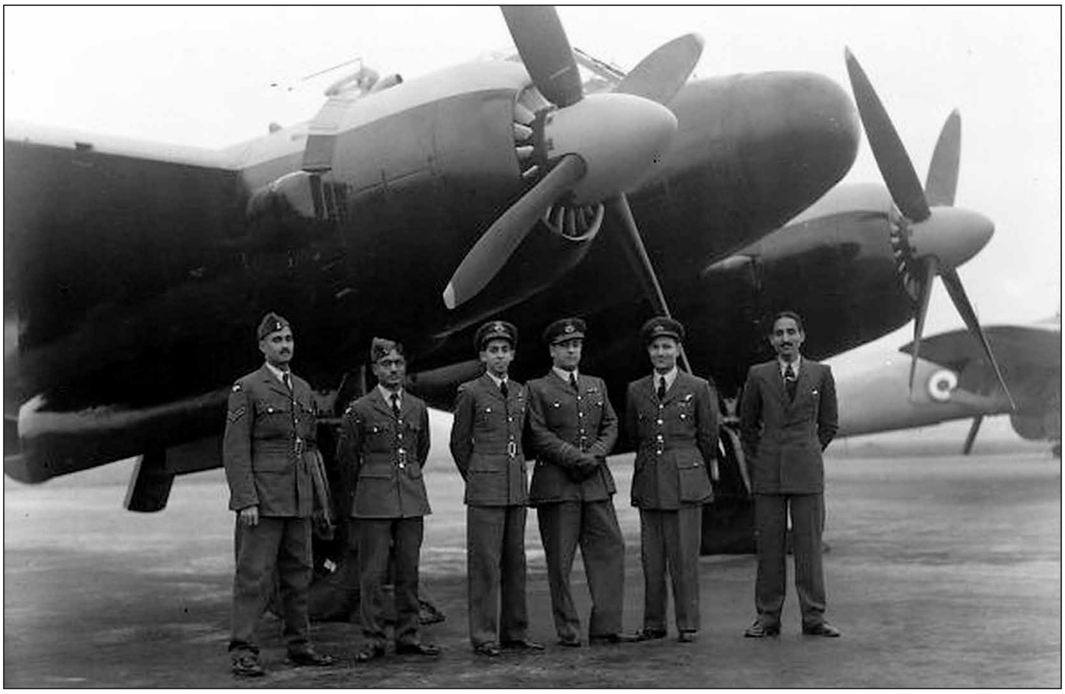
A total of eight Halifax B Mk VI aircraft were acquired, out of which five airframes had seen no RAF service. These were obtained through London Aero Motors Service, overhauled by Airtech Ltd, and modified to carry an additional Hercules engine in the bomb bay. British American Air Service crews ferried the aircraft to Pakistan.[18] A contract pilot Randy Knowlton was hired to convert RPAF pilots, and it was thought that additional contract pilots would be used to crew the squadron. This plan was later dropped in favour of manning the squadron with the RPAF crew as the service started hiring Polish pilots and crews who had served in RAF during the Second World War. Three Halifax C Mk VIIIs were also acquired, one of which was lost due to fuel starvation during the ferry flight. However, RPAF's plans for using Halifaxes as an operational deep strike force turned out to be challenging because of high maintenance requirements of the aircraft.

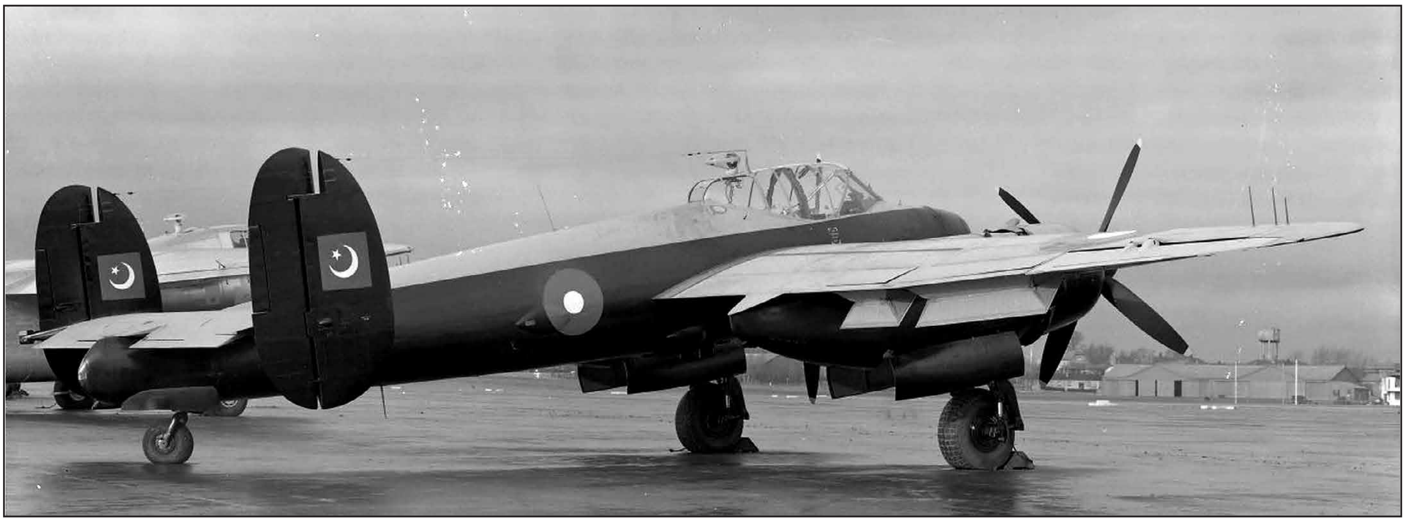
Additionally, RPAF, which had insufficient trained manpower, found it difficult to operate an aircraft requiring seven crew. The aircraft, therefore, offered a sub-optimal solution to RPAF's deep strike requirement though its ad hoc use was made for air dropping supplies in northern areas. Some years later, another effort was made to operationalise these aircraft which also met limited success.

RPAF's growth plans were modified when an occasion developed to acquire Bristol Brigand light bombers. This opportunity was availed by reducing the plans for transport aircraft from 20 to only 10 (note Target II, III, and IV in the previous chapter). The twin-engine Bristol Brigand was developed to replace the Bristol Beaufighter in RAF service. The Brigand, powered by two 2,470hp Centaurus 57 engines, had a three-man aircrew and could carry a 4,000lb payload with manoeuvrability better than a heavier bomber. A total of 12 Brigands were ordered, and RPAF raised 11 Squadron to operate this aircraft and form a component of RPAF's strike element. Two of the most experienced multi-engine RPAF pilots – Squadron Leader Abdullah Baig and Flight Lieutenant Mansoor Shah – were initially to convert to the type. Squadron Leader Abdullah Baig and a crew were detailed for training on the aircraft in the UK in late 1948, while another example ferried by Bristol pilots arrived in Mauripur, and Flight Lieutenant Mansoor Shah was converted on the type in Pakistan. The three RPAF aircrew ferried the aircraft from the UK (tail number N1125) in January 1949. The ferry journey was eventful, with the weather causing a diversion to El Adem in Libya instead of Cyprus. The final stopover before Karachi was RAF Shaibah in Iraq. The pilot, unfortunately, overshot the runway, and the aircraft ended up in a ditch with undercarriage torn and resting on its belly. While trying to retrieve their luggage from the wreck, the crew realised that the standard survival gear for flying over the sea was missing, a reflection of the cavalier flight safety attitude of the time.

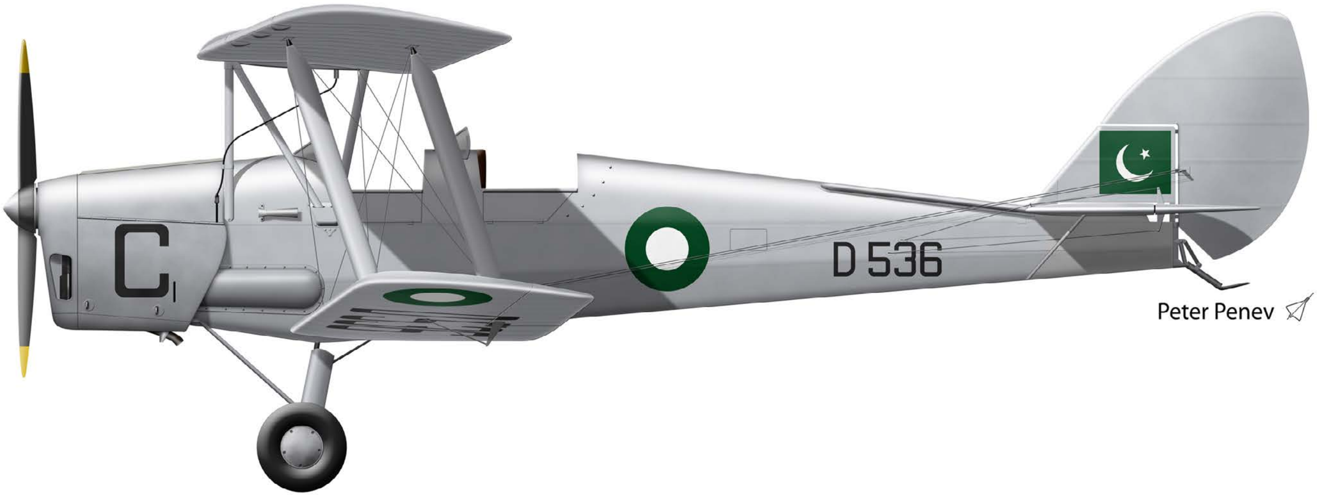
Soon afterward, RPAF's command was taken up by Air Vice Marshal R. L. R. Atcherley, and with that, a rethink of the Brigand order took place. Perhaps it was felt that a light bomber of the Brigand type offered little utility in the coming years, and the contract for the aircraft was cancelled, the single aircraft present in Pakistan was returned to the UK. The originally raised 11 Squadron for the type was number plated, to be reactivated later to become the air force's first jet squadron. Later, consideration was given to acquiring multi-engine Lincoln bombers from the UK, followed by Canberras. None of these materialised into acquisitions, and a bomber force would have to wait for the arrival of American equipment in the shape of B-57B/Cs.

What turned out to be a most contentious episode was RPAF's association with the Bristol Freighter aircraft. The decision to acquire Bristol Freighter transport aircraft

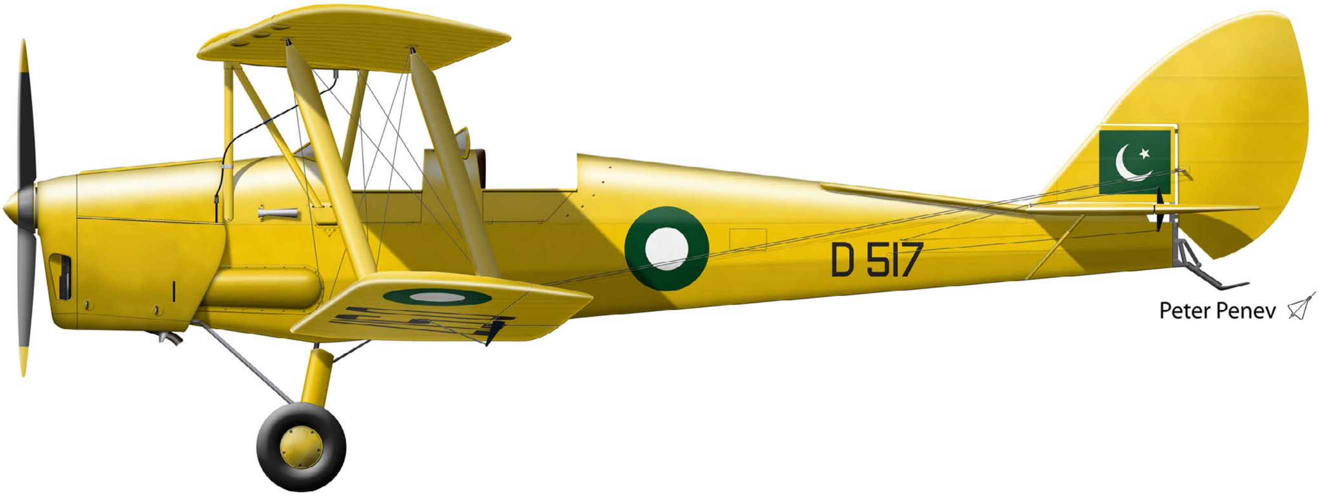

RPAF crew before the ferry flight of the Brigand to Pakistan. Standing third from right is Squadron Leader Abdullah Baig, a pioneering multi-engine pilot in RPAF. He would later join Pakistan International Airlines. (BAE Heritage)


A Bristol Brigand in RPAF colours before delivery. (BAE Heritage)

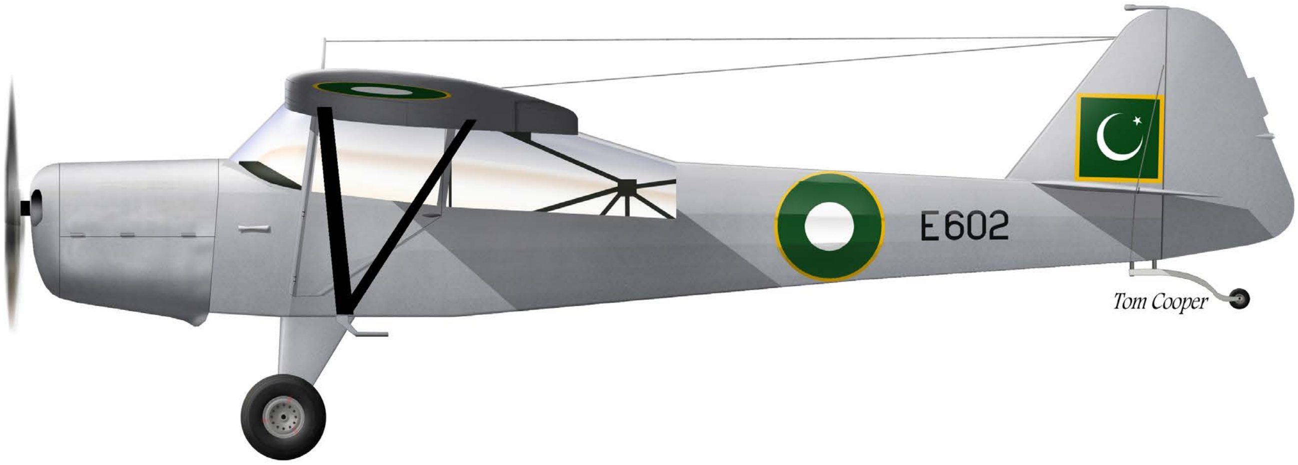
This line-up of RPAF multi-engine aircraft includes a Halifax, two Dakotas, and a Bristol Freighter. (Kamal Butt)



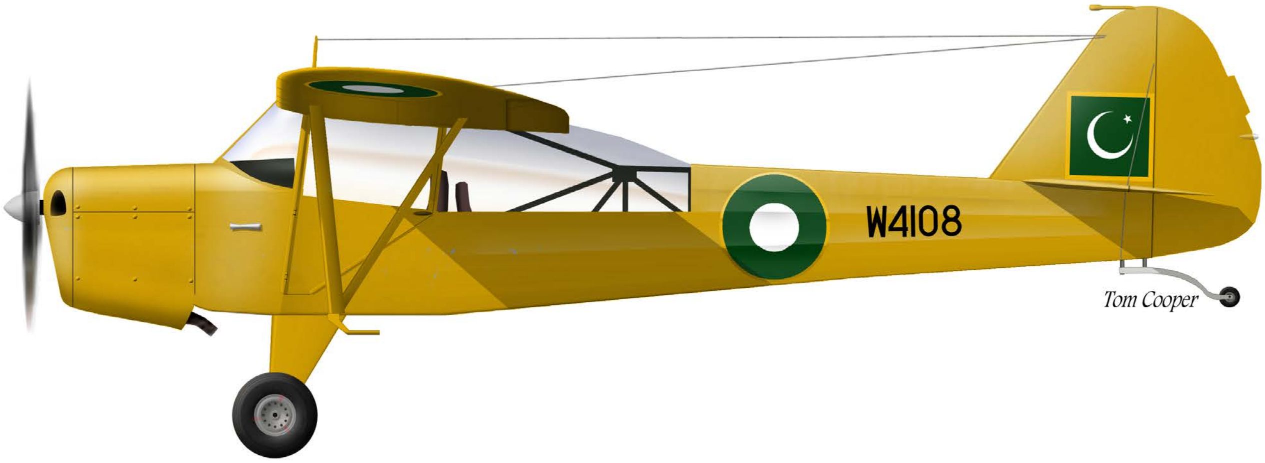
Coming into being through Indian Air Force units based in the Crown Colony of India, Royal Pakistan Air Force went through the same process of establishment and build-up as many other air services created by, or with help of Great Britain. One resulting norm was the widespread use of de Havilland DH.82 Tiger Moth biplanes for training purposes. Several of the 16 Tiger Moths inherited by the RPAF bore the high-speed silver overall finish (Specification DTD772, manufactured by Dockers Brothers Aircraft Finishes, of Birmingham, England), as illustrated here. (Artwork by Peter Penev)



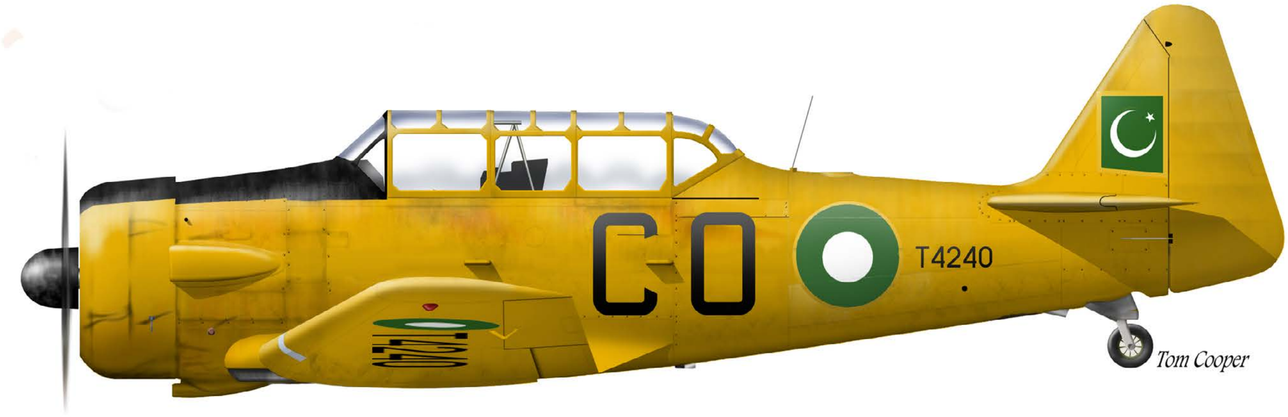
The colours on all of British-manufactured aircraft operated by RPAF and PAF in the late 1940s and through the 1950s were based on the British Standard 381C – introduced to the paint industry in the early twentieth century and formalised in 1930. On its establishment in 1947–1948, the RPAF had few choices but to continue making use of British Standard colours, simply because stocks of these were available on its air bases. By this time, the Second World War was over and there was no need for RAF aircraft to wear camouflage colours. Correspondingly, most trainers were pained in the so-called 'trainer yellow' – bold yellow (BS381C/363) – including a number of Tiger Moths inherited painted that way. The type retained this livery until withdrawn from service. (Artwork by Peter Penev)



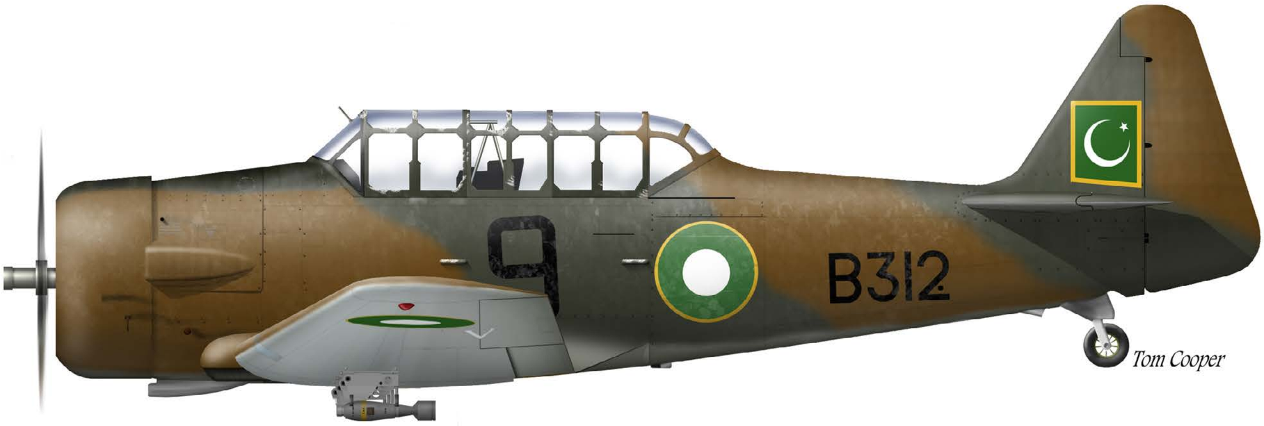
The Taylorcraft Auster was a military liaison and observation aircraft manufactured by Taylorcraft Aeroplanes (England) Ltd during the Second World War. The RPAF inherited a very small number of the AOP IV version, one of which is shown here in high-speed silver overall finish, with the serial E602. They were operated by No. 1 Air Observation Squadron from Peshawar air base. (Artwork by Tom Cooper)



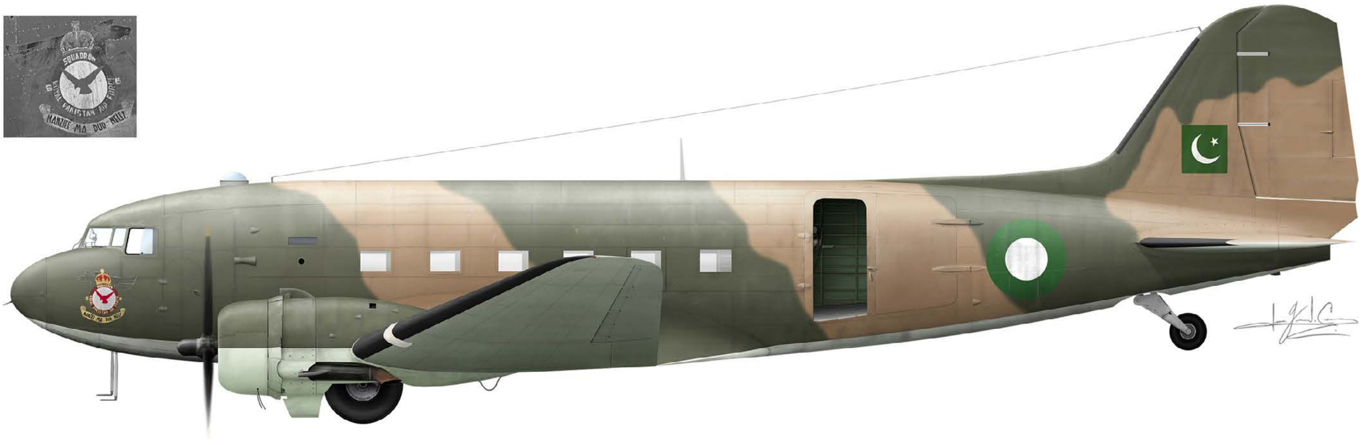
A total of eight slightly more powerful Auster AOP Vs (and another 20 Auster AOP VIs) was allocated to the RPAF in 1947. No.1 Air Observation Squadron is known to have operated 17 AOP Vs, which were issued serials in the range W4100–W4116. Most were painted in bold yellow (BS381C/363) overall, but some wore camouflage patterns. Eventually, the entire fleet was handed over to the Army. (Artwork by Tom Cooper)



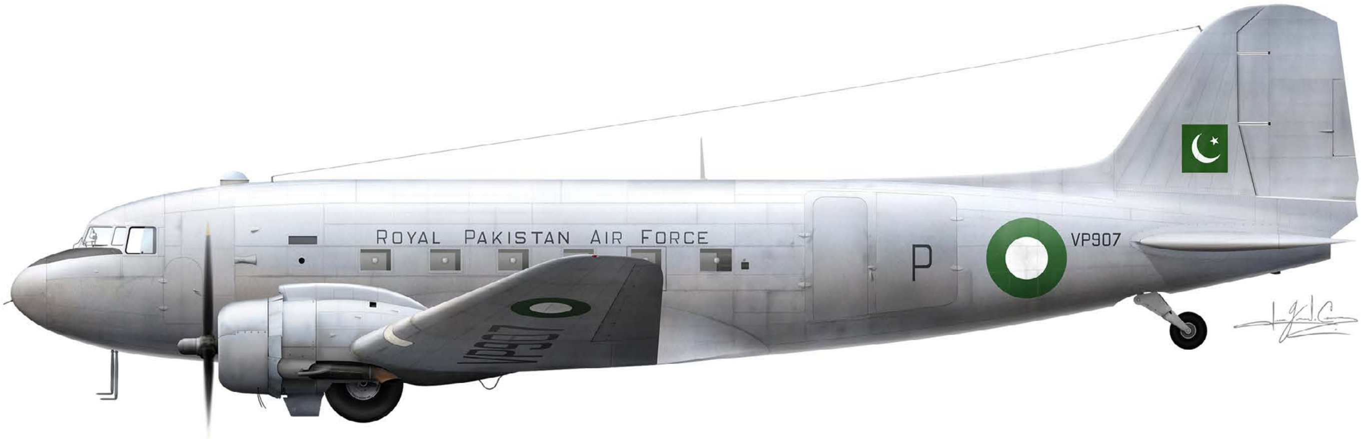
The Harvard IIB was a version of the North American T-6 training aircraft, manufactured for Great Britain starting in late 1939. With their primary purpose being training, most of the 29 examples allocated to the RPAF were painted in bold yellow (BS381C/363) overall. Initially, only the 'anti-glare panel' along the top fuselage and engine cowling was painted in matt black. Later on, some had their spinners and bands around the front of the engine cowling painted in red or dark green. (Artwork by Tom Cooper)



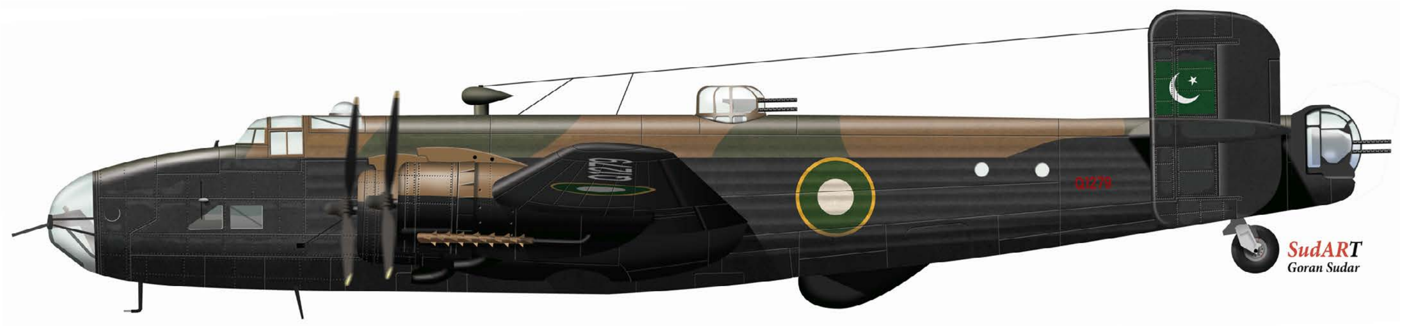
Several Harvard T.Mk IIBs and many of the 30 T-6Gs acquired form the USA in 1948 were deployed as operational trainers, for liaison and artillery spotting, and as light strikers for nocturnal operations. The aircraft in question appear to have been painted in dark earth (BS381C/340) and dark green (BS381C/241) on top surfaces and sides. Sadly, available photographs do not permit a precise identification of the colours applied on undersurfaces: this example, known to have worn such a livery, is shown as armed with one 25lb bomb, installed on one of four hardpoints usually attached on each wing. (Artwork by Tom Cooper)



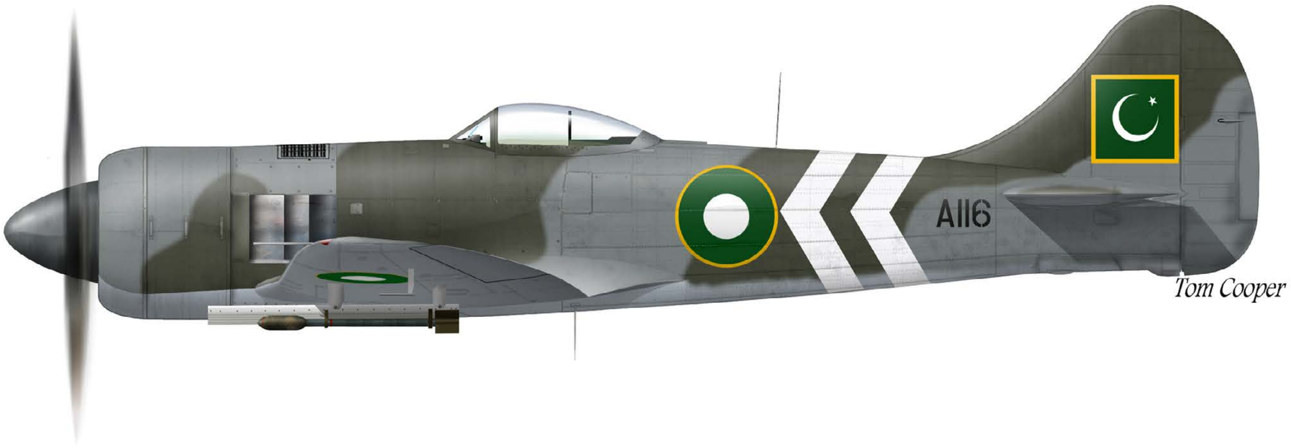
From the RIAF's large fleet of 78 Douglas C-47 Dakotas, the RPAF was allocated as many as 32 aircraft. Most of these wore a standardised RAF camouflage pattern in dark green (BS381C/241) and dark earth (BS381C/340) on upper surfaces and sides and sky (BS381C/210) or Eau-de-Nil (BS381C/216) on undersurfaces. Many had the original crest of No. 6 Squadron (shown inset) applied on the forward fuselage under the cockpit. (Artwork by Luca Canossa)



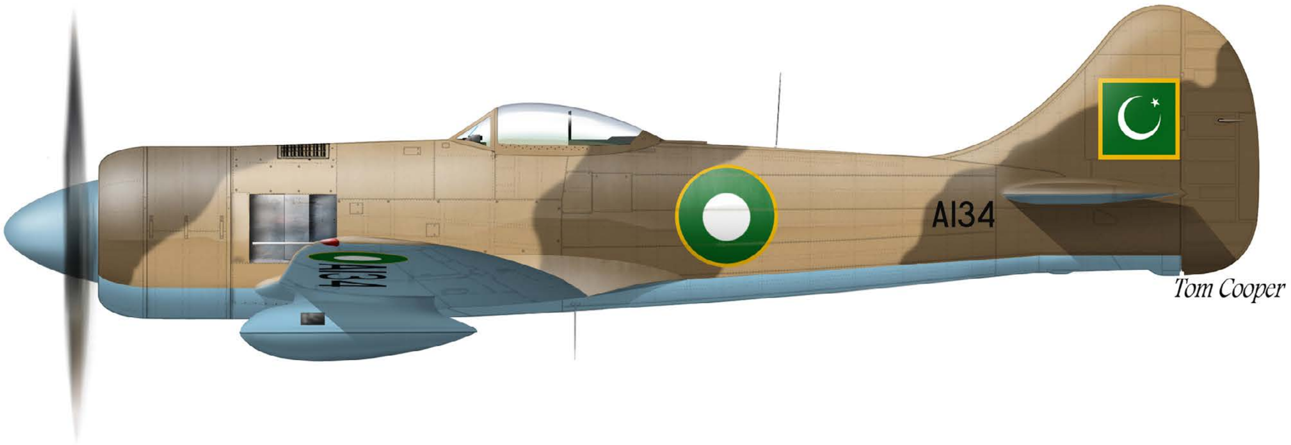
During the early 1950s, in the course of locally conducted overhauls, most RPAF Dakotas lost their camouflage livery. Instead, they were left in 'bare metal overall', which actually consisted of a single layer of clear lacquer applied over a layer of varnish. As standard for RPAF, roundels were always applied in six positions, and accompanied by the fin flash. Small black serials were always applied on the rear fuselage and the lower surface of the left wing, and this example has the full service title along the upper fuselage. (Artwork by Luca Canossa)



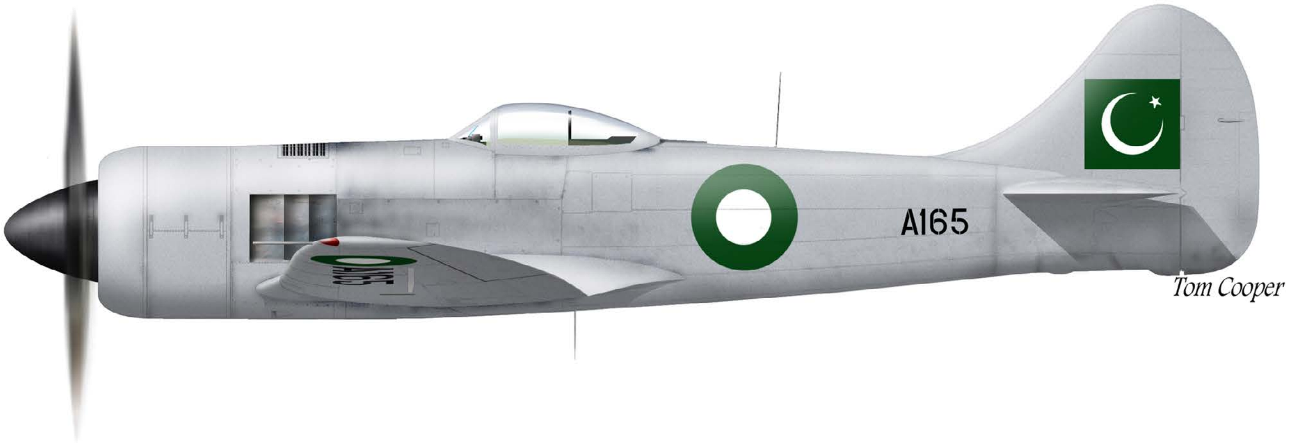
The PAF was the last military user of the Handley Page Halifax bomber. The fleet of eight B.Mk VIs was acquired starting from 1948, and operated by No. 12 Squadron, which became involved in resupply operations for Pakistani troops in Kashmir. Overhauled by Airtech Ltd in the UK before delivery, all were painted in dark earth (BS381C/350) and dark green (BS381C/641) on upper surfaces, and in night (BS381C/642) on undersufaces and sides, and wore roundels in six positions. Serials (Q1279 in this case) were usually applied in white on the rear fuselage (though on this occasion in red) and, RAF-style, in white, on the undersurface of the left wing. (Artwork by Goran Sudar)



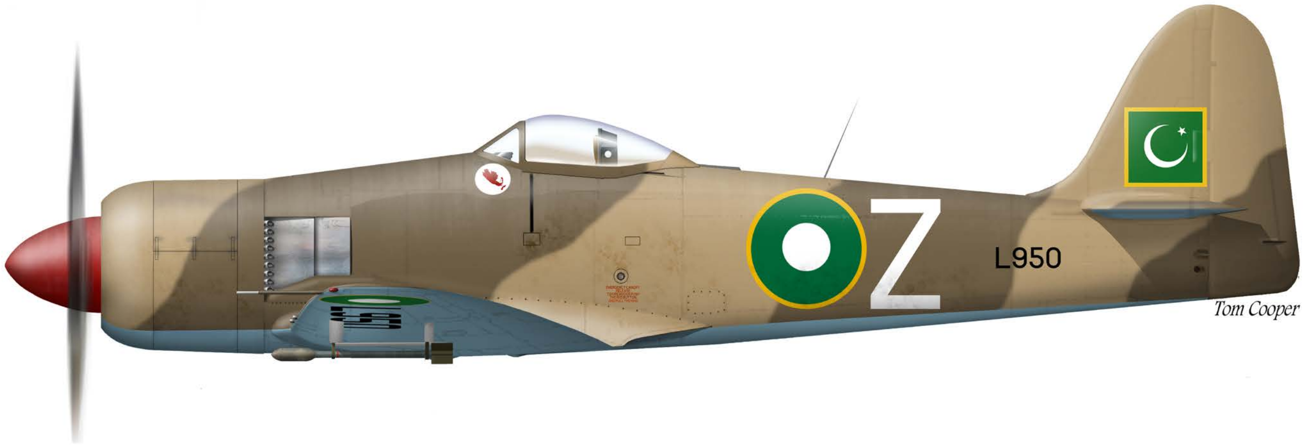
The RPAF was allocated a total of 35 Tempest II fighter-bombers (powered by the Centaurus V radial engine) in 1947, all of which retained the camouflage pattern standardised by the RAF in 1947–1948, including ocean grey (BS381C/633 or FS36187, which evolved from mixing the medium sea grey and night) and dark green (BS381C/241, FS34079) on top surfaces and sides, and undersides in medium sea grey (B381C/637 or FS36270). Borders between camouflage colours on the side were usually sharp, but on this aircraft ground crews seem to have oversprayed some damage caused by operations from dirt strips, and added two chevrons to make their identification from Indian-operated Tempests easier. Notably, all national markings had yellow outlines. (Artwork by Tom Cooper)



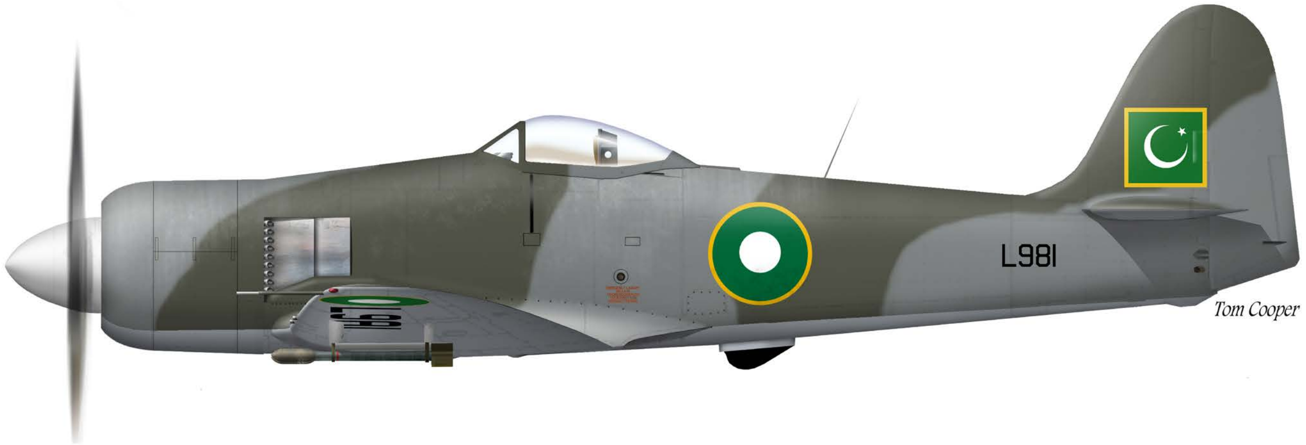
The second batch of 24 Tempest IIs acquired in 1949 (serials A128–A151) arrived painted in dark earth (BS381C/350) and middle stone (BS381C/362) on upper surfaces and sides (applied following the standardised pattern), and azure blue (BS381C/104) on undersurfaces. Moreover, they have their serials applied in RAF-style on the wing undersides. Armament on all Pakistani Tempest IIs included four 20mm Hispano cannons. Unlike the example with serial number A116, illustrated above and shown as armed with a 60lb (127mm) unguided rocket (just one is shown for reasons of clarity), this example – serial A134 – is illustrated with an underwing drop tank installed. Alternatively, the aircraft could carry a single 1,000lb (500kg) bomb under each wing. (Artwork by Tom Cooper)



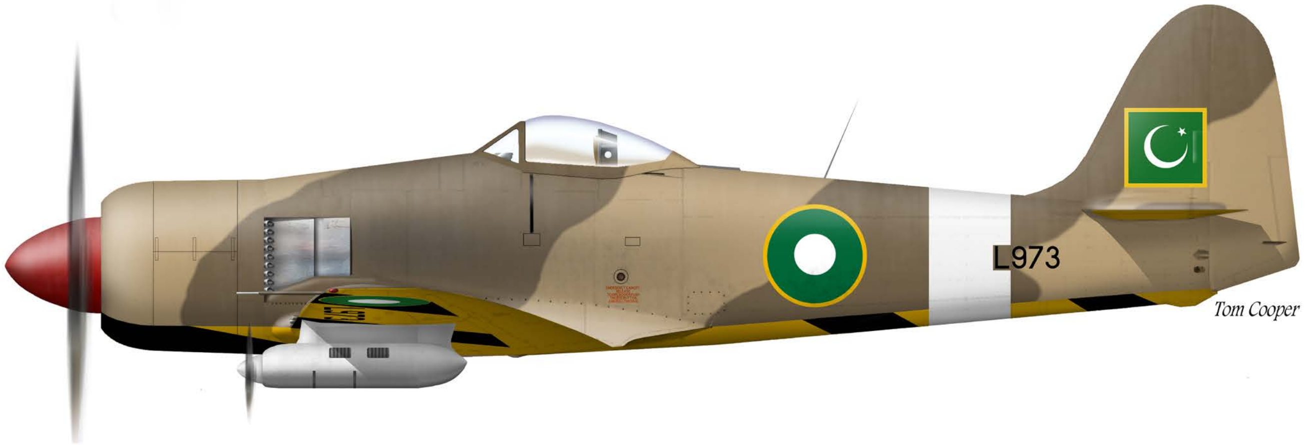
The third batch of Tempest IIs acquired by the RPAF consisted of about 24 aircraft, all of which were painted in the so-called 'silver dope' or 'high-speed silver' colour applied overall – the same colour made to the DTD772 specification by Dockers Aircraft Finishes as used on the Tiger Moths and Austers mentioned above. A few also had a black 'anti-glare panel' applied along the upper forward fuselage. (Artwork by Tom Cooper)



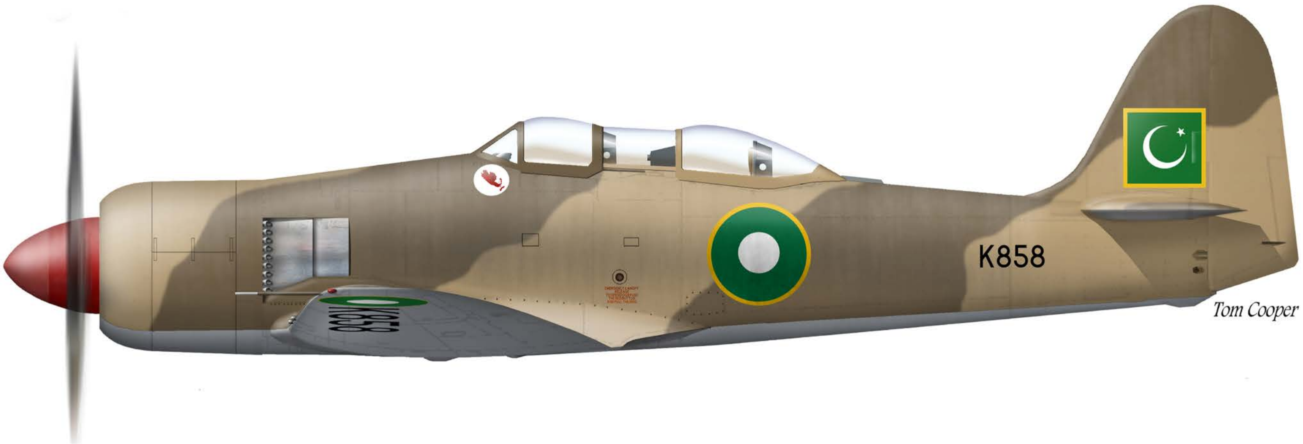
Hawker Fury fighter-bombers were purchased to bolster and then replace the fleet of Tempest IIs and formed the mainstay of the RPAF for years afterwards. Fitted with a slightly more powerful variant of the Centaurus engine with a five-bladed propeller and a shorter-span wing, the Fury served with Nos. 5, 9, and 14 Squadrons early on, and later with No. 23 Squadron (a specialised COIN asset for operations in the 'tribal areas'). The first batch of Furies acquired by the RPAF received a camouflage pattern in dark earth (BS381C/350) and middle stone (BS381C/362) on upper surfaces and sides (applied to the standardised pattern), and azure blue (BS381C/104) on undersurfaces. Single-letter codes were applied in white on some aircraft, and No. 9 Squadron's aircraft had the unit insignia – a red griffin on a white circle – in front of the cockpit. (Artwork by Tom Cooper)



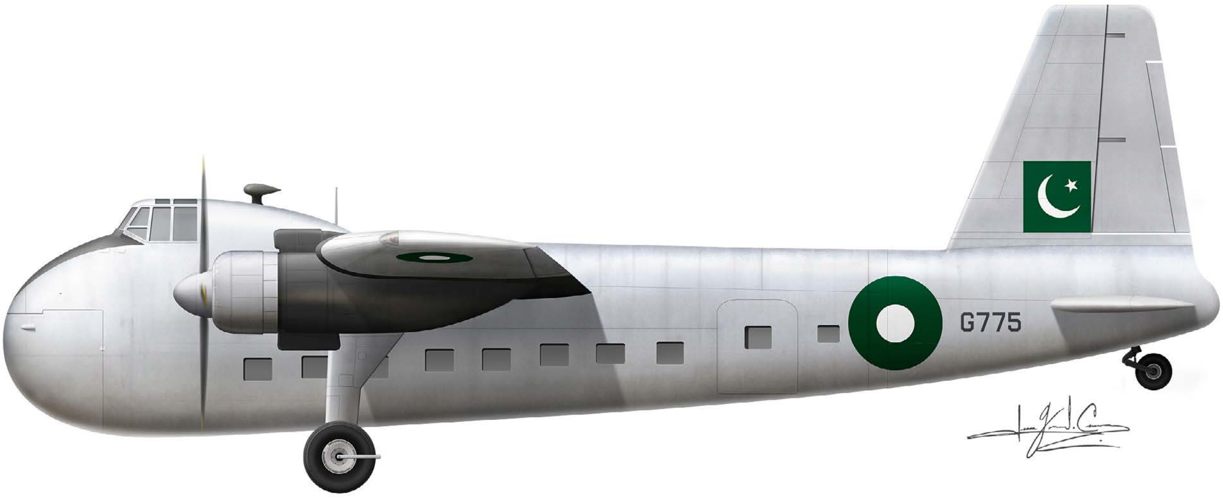
The second batch of Furies – aircraft with serial numbers from L975 upwards – were reconditioned Sea Furies of the Fleet Air Arm (naval aviation of the Royal Navy). Because of this, they had a cropped fin and a tailhook fairing. This and a few other examples also had a fairing for a radio compass under the lower fuselage. All were painted in ocean grey (BS381C/633 or FS36187) and dark green (BS381C/241, FS34079) on top surfaces and sides, and had their undersides in medium sea grey (B381C/637 or FS36270). (Artwork by Tom Cooper)



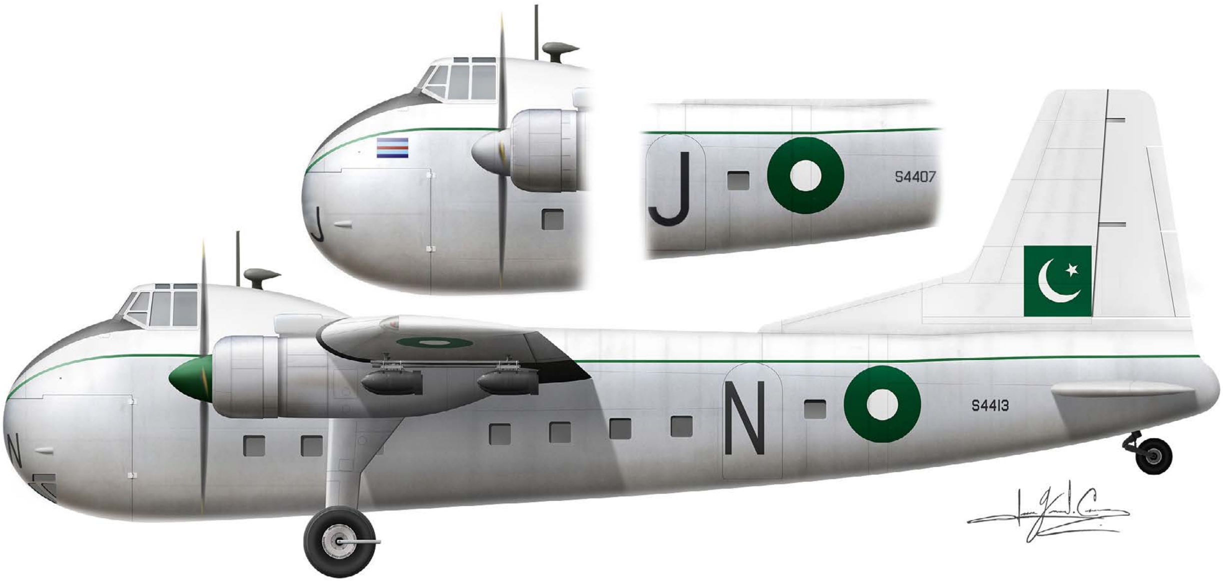
This aircraft is illustrated as it would have appeared while serving in the target-towing role: with undersides painted in yellow (BS381C/363) with diagonal black stripes, and the serial applied on the undersurface of the left wing in much smaller fonts than usual. The fuselage band – usually applied in sky Type-S in the RAF, at the factory – was applied 'in the field', by the squadron's maintenance personnel, in white. (Artwork by Luca Canossa)



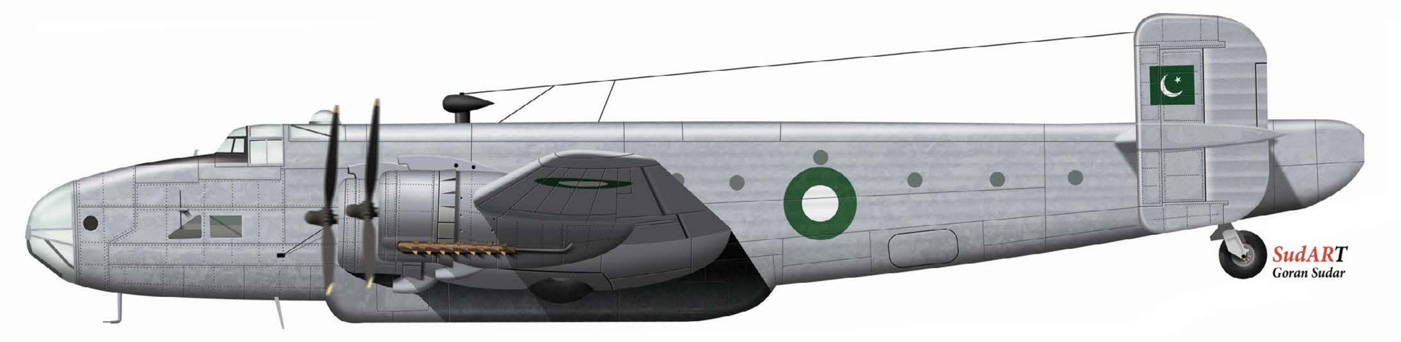
In 1949 and 1950, Pakistan purchased a total of 87 Sea Fury FB.Mk 60s, five Sea Fury FB.Mk 11s, one prototype Fury F.Mk 2/3, and five newly-built Sea Fury Mk 61 two-seat conversion trainers. All of the latter were painted in 'desert' camouflage, including dark earth (BS381C/350) and middle stone (BS381C/352) on top surfaces and sides (applied to the standardised pattern), and azure blue (BS381C/104) on undersides. Two-seat Furies wore serials starting with the prefix K, and most had their spinners painted in red. This example is shown wearing the crest of the No. 9 Squadron underneath the front portion of the cockpit. (Artwork by Tom Cooper)



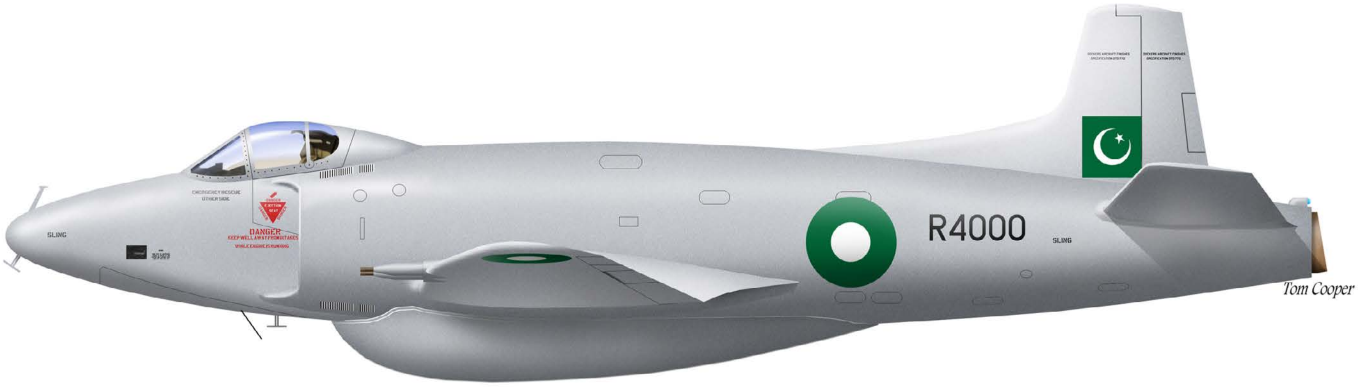
The Bristol Type 170 Freighter was a twin-engined transport acquired by the RPAF starting in 1949. The RPAF purchased a mix of 34 overhauled and newly-built Freighter T.Mk 21E/Ms and T.Mk 31E/Ms and used them for transport, VIP transport, and for training purposes. Illustrated here is the first Freighter T.Mk 21E manufactured for Pakistan, serial G775; the rest of that batch included serials up to G809. (Artwork by Luca Canossa)



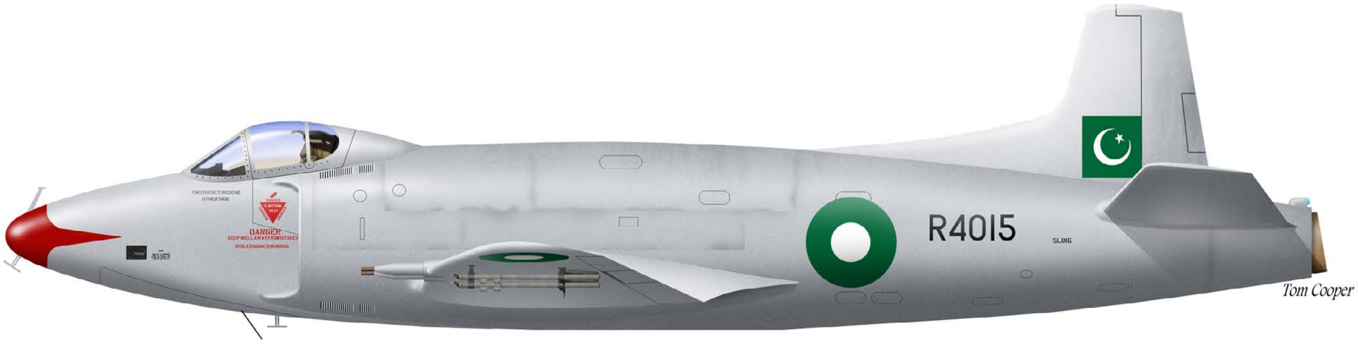
The second Pakistani order, placed in May 1952, comprised 40 Freighters, including 33 T.Mk 31Ms and 7 T.Mk 31Es, the last of which was delivered in June 1955. All of the former had bomb racks and equipment for dropping paratroopers, while two of the latter were equipped for VIP transport. Their serial numbers were in the range S4401 to S4438. Surviving Pakistani Freighters were bought by SAFE Air and used in New Zealand into the early 1970s. (Artwork by Luca Canossa)



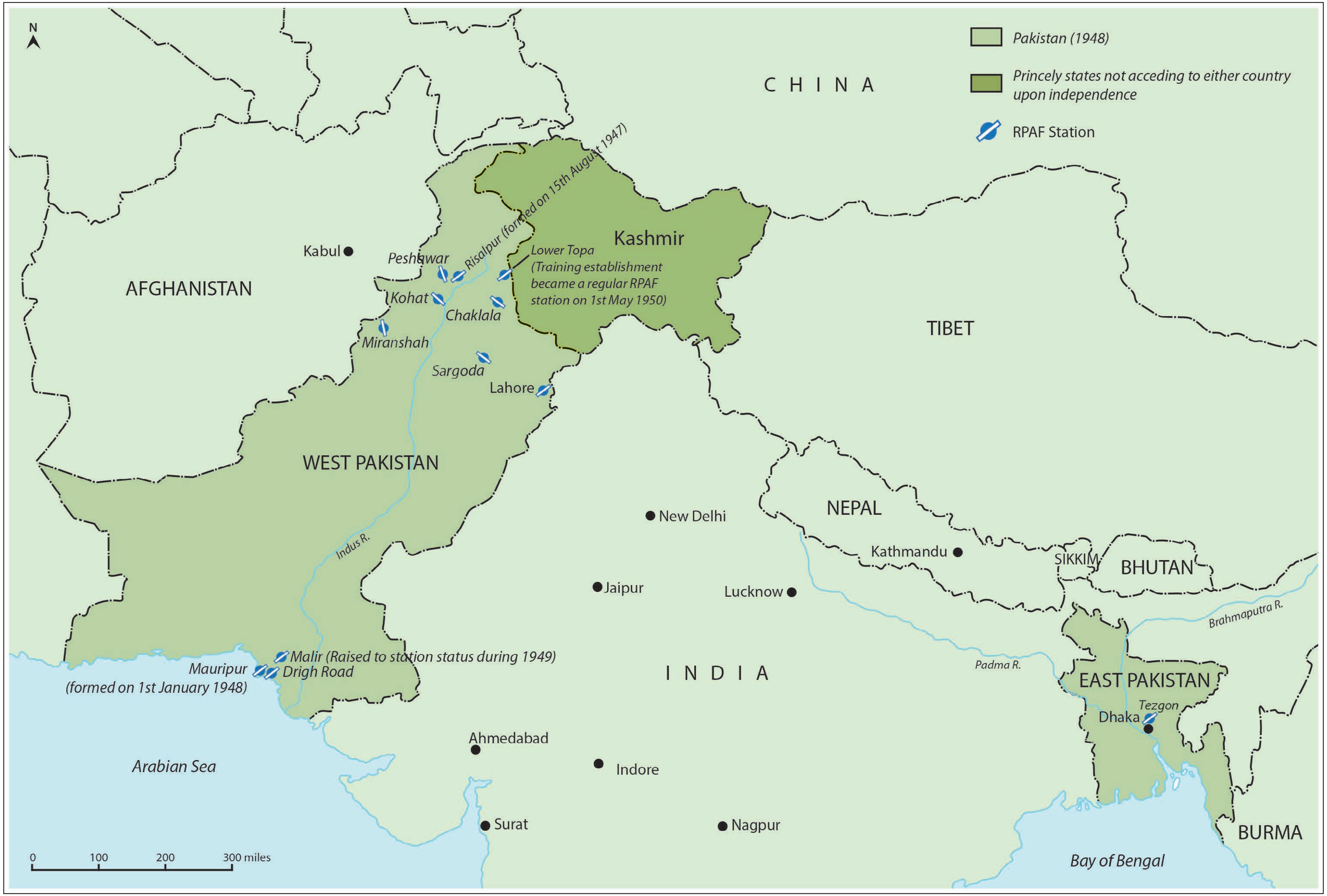
In addition to eight Handley Page Halifax B.Mk IVs, PAF acquired three Handley Page Halifax C.Mk VIII cargo aircraft from Great Britain. With one running out of fuel during the delivery flight, only two reached Pakistan safely. While this variant subsequently became known as the HP.70 Halton I/II in civilian service, PAF retained the original designation. Flown by No. 12 Squadron (based at Mauripur), they served alongside Vikings and Dakotas as transports. There are very few photographs of Pakistani Halifax C.Mk VIIIs, but those that are available show them painted in overall high-speed silver finish, specification DTD 772. (Artwork by Goran Sudar)



Following protracted negotiations, a combination of a lack of funds and severe political pressure 'prompted' Pakistan to purchase a batch of 36 Vickers-Armstrong, Rolls-Royce Nene 4-powered, Supermarine Attacker Mk.538s. Most of these were aircraft surplus to requirements of the Fleet Air Arm. They entered service with No. 11 Squadron in 1951, and were operated for the following seven years, until replaced by North American F-86F Sabres. All were painted in high-speed silver finish overall, and bore serial numbers starting with R4000, applied sequentially. (Artwork by Tom Cooper)

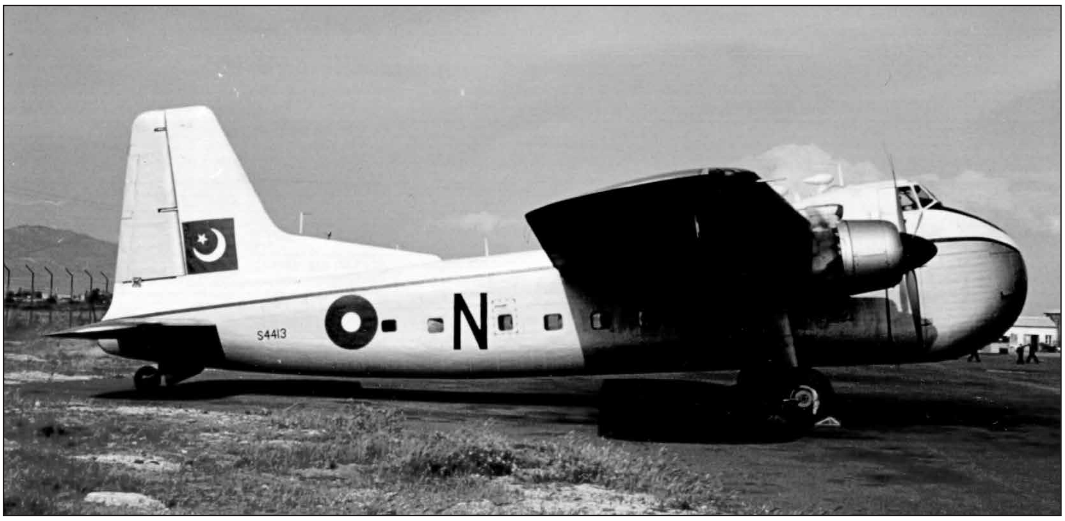


Deliveries of Attackers went on well into 1953, but their low serviceability limited them to operations by just one squadron. As well as interceptors, No. 11 Squadron flew them as fighter-bombers: for this purpose, some of the jets had at least two launch rails for unguided rockets attached under each of their wingtips. Furthermore, the unit established an aerobatic team nicknamed 'the Paybills' (the reason for this strange moniker was the instruction urging younger pilots to pay their mess bills on time). (Artwork by Tom Cooper)


N
Pakistan (1948)
Princely states not acceding to either country upon independence
RPAF Station
CHINA
AFGHANISTAN
Kabul
Peshawar
Risalpur (formed on 15th August 1947)
Lower Topa (Training establishment became a regular RPAF station on 1st May 1950)
Kashmir
Kohat
Chaklala
Miranshah
Sargoda
Lahore
TIBET
WEST PAKISTAN
New Delhi
NEPAL
Kathmandu
SIKKIM
BHUTAN
Indus R.
Jaipur
Lucknow
Brahmaputra R.
Malir (Raised to station status during 1949)
Mauripur (formed on 1st January 1948)
Drigh Road
INDIA
Padma R.
EAST PAKISTAN
Tezgon
Dhaka
Ahmedabad
Arabian Sea
Indore
Surat
Nagpur
BURMA
Bay of Bengal
0
100
200
300 miles

The distribution of Royal Pakistan Air Force bases shows an emphasis on West Pakistan, the historical infrastructure near Karachi, and the need for airfields near the Kashmir conflict zone in the north. (Map by George Anderson)

An RPAF Halifax. (Kamal Butt)



A Freighter from the second batch. (Kamal Butt)

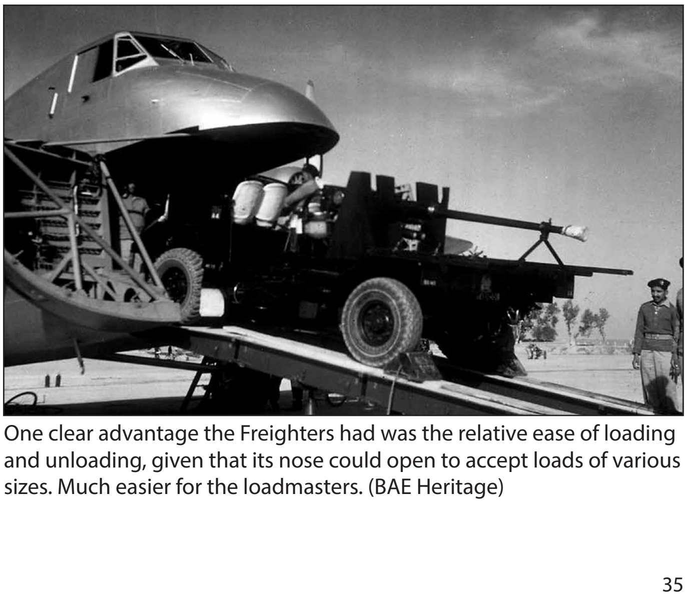
and the choice of aircraft itself was less controversial. What was problematic was the total number of aircraft RPAF eventually acquired. The earlier mentioned Operations Requirements Committee was tasked to select a replacement for Dakota aircraft and selected the Bristol Freighter over Vickers Valetta. It is unclear why RPAF did not continue with Dakotas as a transport aircraft. In other countries the type continued to serve for several decades and Pakistan had set up local aircraft overhaul facilities for Dakotas.

RPAF/PAF's well-known transport pilot, Air Commodore M.A.K. Dogar, considered the aircraft to have similar performance to the Dakota and opined the original purchase as appropriate if one solely took aircraft performance under consideration. However, even in the first purchase, the number of aircraft was maybe higher than needed.[19]

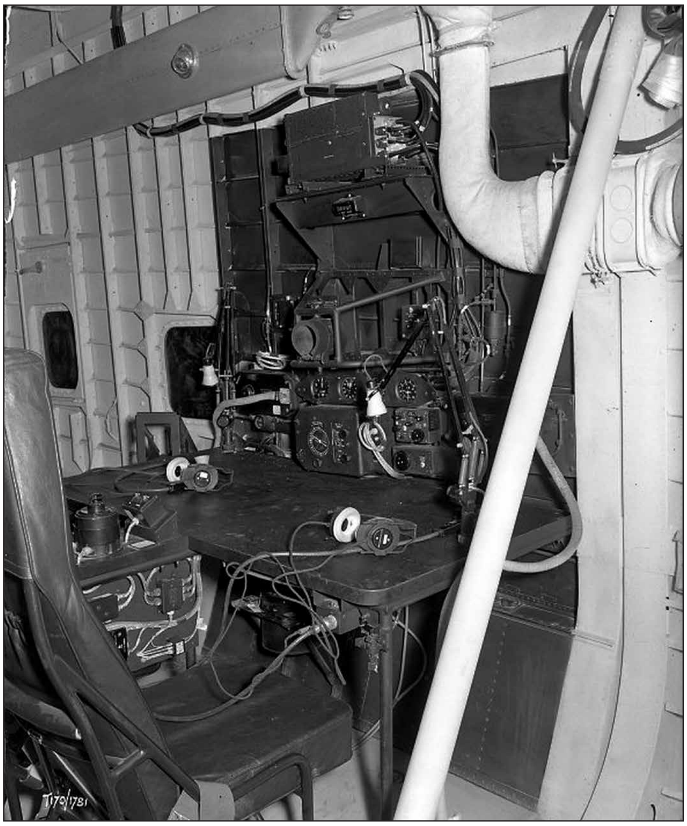
On the positive, Freighters had the same engine as other RPAF aircraft (the Bristol Hercules twin-row radial-engine powered both Freighters and Halifax aircraft), thus easing maintenance infrastructure needs. Its configuration allowed for easier loading and unloading of stores. More importantly, with low-pressure tires, it could land on both unprepared and high-altitude airfields in abundance in Northern Pakistan and East Pakistan.

RPAF ordered Freighters in several variants, including refurbished civil variants converted to military T.Mk 21E/Ms and T.Mk 31E/Ms. The aircraft was purchased in various configurations, including transport, VIP, and flying classroom. Later purchases included modifications (carried out by the Bristol Aeroplane Company in the UK) to allow bombs to be carried under the wings. A bombing sight was installed in the nose position where the glassworks at the bottom of clam-type doors allowed the positioning of a bomb aimer. Navigational aids included the airborne unit Rebecca system (short for Recognition of Beacons). The set emitted an 'interrogation pulse' which when received by the ground unit (Eureka, from the Greek word "I have found it"); caused a pulsed and identity-coded reply. Two aerials on the aircraft received this new signal and displayed it on a Cathode Ray Tube in a form that showed range and direction. The aircraft also used a radar landing system named BABS (Beam Approach Beacon System), which included a responder mounted on a truck and placed at the end of the runways. It was interrogated by a Rebecca unit mounted in an aircraft and responded by transmitting

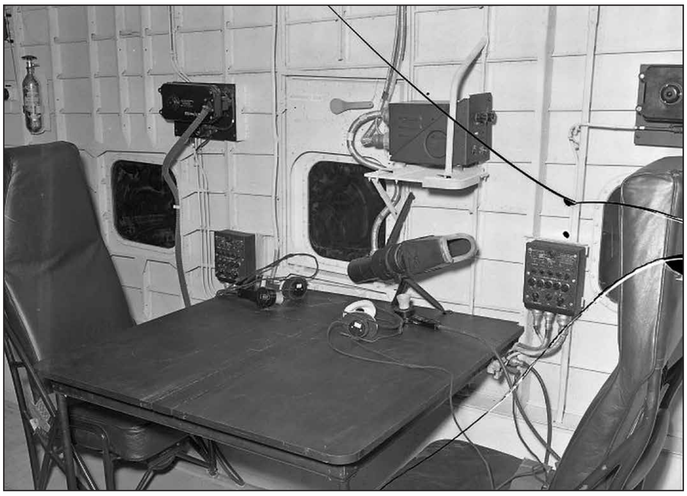
The first Freighter. Air Commodore M.K. Janjua welcomes the crew. (BAE Heritage)



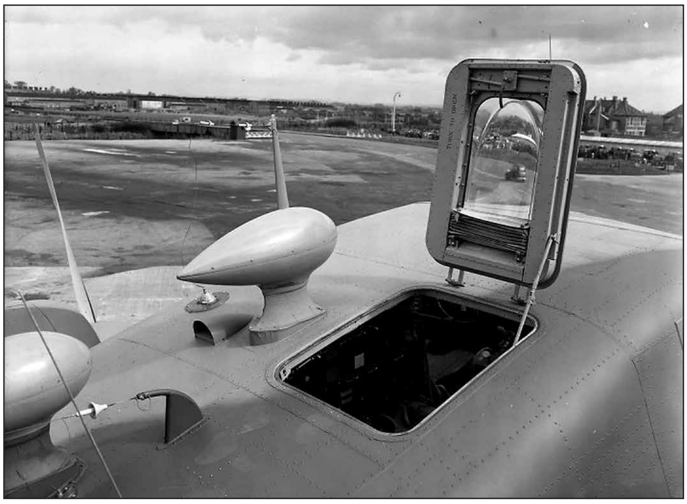
One clear advantage the Freighters had was the relative ease of loading and unloading, given that its nose could open to accept loads of various sizes. Much easier for the loadmasters. (BAE Heritage)



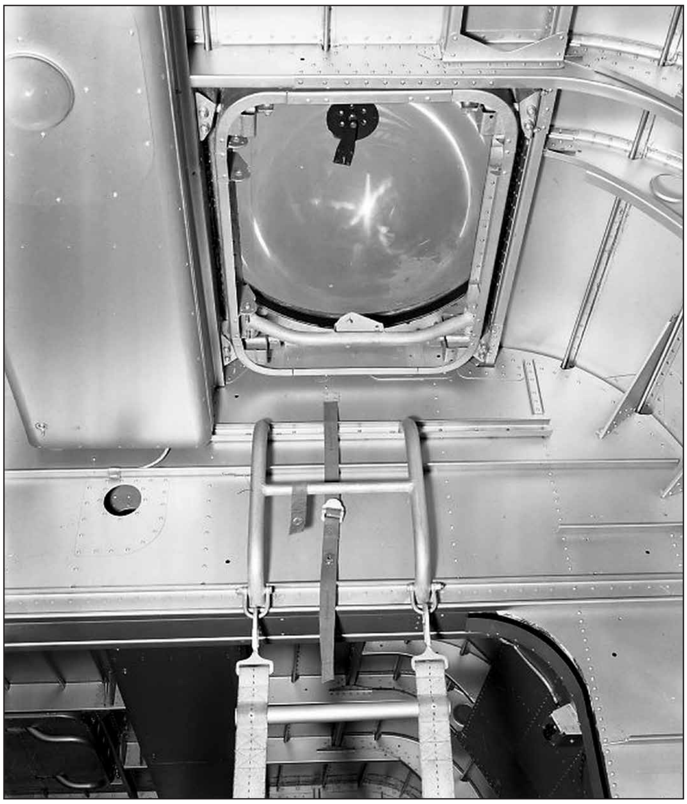
Freighter's classroom configuration. (BAE Heritage)



Another view of Freighter's classroom configuration. (BAE Heritage)



Open cupola used by the air signaller on a Freighter. (BAE Heritage)



Air Signaller's cupola is seen from the inside of the aircraft. (BAE Heritage)

dots on one side of the runway and dashes on the other. The strength of the reception in the aircraft depended on the aircraft's position relative to the runway's centreline. The aircraft's equipment could then determine its position relative to these dots and dashes and facilitate the approach to the airfield.

The Freighters with flying classroom configuration had seats fitted with instrument panels where two navigators could sit opposite each other with individual positions equipped with equipment like direction finders, compass, gyroscope, radio compass repeater, etc. The configuration was used to train multiple navigators.

The first Bristol Freighter aircraft (serial G775, a Mk 21E variant) was handed over to RPAF in August 1948 and left Flinton UK on August 13, 1948. Freighter deliveries continued through the following years, and a total of 35 aircraft were delivered consisting of Mk 21E/M versions and sequentially numbered starting from G775 to G809. The price of the aircraft per unit varied from approximately GB£50,000 to GB£65,000, depending upon whether the aircraft was refurbished or newly built.[20]

The second order of 40 Freighters was placed in May 1952 and included 33 Type 170 Mk 31M and seven Mk 31E types besides the modifications requested by RPAF. The order price was GB£77,000 for Mk 31Ms and GB£82,500 for Mk 31Es, with additional modification costs of GB£3,990 per aircraft. Originally it was understood that all aircraft were to be fitted with bomb racks and parachute equipment which was later modified to 33 Mk 31 aircraft with bomb racks and parachute equipment, five Mk 31E aircraft less bomb gear and parachute equipment, and two VIP aircraft. The aircraft serial numbers started with S4401 and continued sequentially, the last serial being S4438 and delivered in June 1955. The combined order of Freighters meant that at one point in time, the aircraft was the most numerous type in RPAF, which given the service's role, budget, and resources, was a very unacceptable position. While ostensibly, it had an offensive role with its bombing capability, the aircraft was slow and had no defensive weapons. As Second World War experience showed, any offensive missions would be impossible without extensive fighter escort, even for purpose-built bombers. The ability to provide requisite fighter escort was not a capability that RPAF had. RPAF had a limited number of fighter aircraft, and any serious offensive effort through Freighters would require a large number of sorties, with each such sortie requiring more than one fighter escort. A problem compounded by the fact that the bomb-laden Freighter would be much slower than its escorting fighters. Tactics centred around multiple fighter screens would have to be adopted, consuming a disproportionate amount of fighter aircraft resources. Add to this the inevitable attrition of fighter escorts, RPAF's meagre fighter force would have quickly become ineffective over a period of time.

Additionally, the twin-engine aircraft with three crew members would have had significantly more operating costs than RPAF fighter aircraft, and the service was short on money and trained manpower. Fury or Attacker fighter aircraft could be acquired at a cost substantially less than a Freighter, and an RPAF with more fighter aircraft would have had a more well-balanced force structure. This decision to purchase a disproportionate number of Freighter aircraft can also only be rationalised by considerations of British commercial interests taking precedence over RPAF's requirements.

In total, RPAF's acquisition of Freighters amounted to 81 aircraft.

Miscellaneous aircraft

RPAF had to quickly build its training capacity to address the shortage of qualified pilots and navigators at inception and meet its projected growth needs. RPAF's first training aircraft of six Harvard 2Bs flew in from Ambala in India to Risalpur on 6 September 1947, which along with four Tiger Moths, created the nascent air force's flying training capability. This capacity was augmented by the order of 30 Harvard T-6Gs from the USA in early 1948 (which was earlier reluctant to supply the same) and another 14 Tiger Moths.[21] A VIP configured Vickers VC1 Viking aircraft was also ordered in 1948 for the use of the Governor-General, which was later replaced by a Viscount aircraft in 1956.

Personnel and Infrastructure

While short on equipment, RPAF's real challenge was the shortage of trained manpower in critical branches like flying, maintenance, navigation, and even more importantly in officers with sufficient experience to fill critical positions.

Several training institutions were set up almost immediately on the country's creation. As discussed earlier the rapidly deteriorating communal relations put paid to earlier plans of RPAF undertraining officers and men completing training in existing IAF institutions post-partition. The Flying Training School at Risalpur was started with seven students who moved to Pakistan while still under training in India to make up RPAF's 1 General Duties (GD) course. Besides the Harvards, four Tiger Moth aircraft were used as an elementary training flight. Three RPAF officers who were earlier instructors with RIAF, Flight Lieutenants Zafar Chaudry, Rahim Khan, and Khyber Khan, formed the instructional Harvard flight at Risalpur and started flying instructions for 1 GD course. Flight Lieutenant Khyber Khan undertook the new air force's first training sortie on 22 September 1947.[22] The 1 GD course graduated in January 1948 with five pilots getting their wings. On graduation one of the pilots was posted to 6 Squadron for transport flying and the remaining joined the fighter stream.

Khyber Khan as instructor at Risalpur. (Kamal Butt)

The ultimate aim at Risalpur was to provide "all through" training but achieving this was a challenge owing to the lack of sufficient suitable aircraft.

Wing Commander P.A. McWhannel, Advisor to the UK High Commissioner in a report on RPAF in 1948/49 summarised the training situation as:

> All types of technical and aircrew training are suffering under the disabilities of lack of adequate equipment, lack of experienced instructors, and maintenance difficulties. When the recently arrived draft of RAF volunteers settles down an improvement should be notable. All training conforms to RAF doctrine in so far as the above disabilities permit, but improvisations and departures from schedules have to be accepted as changes in conditions demand.
>
> There is no intention of training Specialists or Technical Officers in Pakistan. Until Bombing and Gunnery ranges are available training in these branches will have to be undertaken outside Pakistan. The UK is still in favour for this external training.
>
> The course at Risalpur lasts eighteen months so the present outputs 8/10 every six months – are RIAF/RPAF trained. Outputs to date average 220 hours flying time including 15 hours by night. Aircraft shortages may necessitate a considerable adjustment to the present training program.
>
> Four civilian flying instructors (ex-RAF) are being obtained.

The need to increase output from the flying training program and above resource issues resulted in RPAF needing to reduce the length of the training program, by late 1948 the duration of the course stood at 12 months broken down as follows:

- Initial Training Wing for three months
- Elementary flying for three months with 45 hours of flying
- Advanced flying for six months with 150 hours of flying

The intake of cadets had increased to 30 cadets every three months and it was planned that by May 1949 the intake would be increased to 40 cadets followed by an increase to 50 cadets by September 1949. RPAF syllabus continued to be based on RAF Cranwell with a student pilot staying with the same instructor throughout his training.

Initially, training for navigators was undertaken at 6 Squadron with a direct entry for navigator courses and from pilots suspended

Mishaps in RPAF were not uncommon. Here we see two Harvards after a collision that resulted in the write-off of the aircraft nominally assigned to the Squadron CO. (Kamal Butt)

from flying training. In 1948, RPAF could manage an average course of six and offered 60 hours of flying plus 10 additional hours of night flying. Initial plans to move navigator training to Risalpur had to be suspended due to a lack of adequate facilities. Former RAF civilian instructional crews were soon replaced by RAF-trained instructors from RPAF.

The teething problems at Risalpur necessitated RPAF to look for additional training support. Twenty-two cadets were sent to the USA in late 1948 for training with Hawthorne Aviation Service at their facilities in Jacksonville, Florida. This was to be a year-long course including both basic and advanced training. Starting with PT-17 Stearmans, the cadets advanced to T-6 Harvards and then to F-51 Mustangs for fighter training flying between 220 to 260 hours during this period. Besides the associated academic training, even skeet shooting was included to improve firing standards of cadets. RPAF was quite satisfied with the training course arranged by Hawthorne and given training requirements contracted the company again in 1952 for training a batch of additional 30 cadets which included a wastage allowance of 40 percent of intake. The syllabus followed the one adopted earlier and broadly included 150 hours of flying instructions on Harvard including night flying along with 200 hours of ground instructions over a six-month period. This was to be followed by fighter conversion over a four-month period including 60 hours of flying. This time around RPAF seriously enquired about the advanced element of the course being conducted on T-33 jet aircraft (perhaps with the view of its increasing use of jets). However, the availability of these advanced jet trainers was not possible and it was decided that the fighter conversion training phase would be completed on F-47 Thunderbolt aircraft. For this second batch, RPAF required Hawthorne to provide instructors in the ratio of one instructor to five students during the primary phase and one instructor to seven students during the fighter conversion phase. Link trainer instructions were required for a minimum of 20 hours along with academic instruction provided by instructors carrying appropriate Civil Aeronautics Administration ratings, firearms practice in form of skeet shooting during the fighter conversion phase at the rate of three rounds per week for eight weeks was also included. Unlike the first course sent to Hawthorne, RPAF's correspondence indicates that the second batch of students had already acquired some flying training (note later comments on University Air Squadrons, RPAF Volunteer Reserves, and local flying clubs).

In these very initial years the UK was also an obvious source for training support. Besides its cooperation with RAF, Air Service Training Ltd at Hamble (AST), UK, was one such source that RPAF used for providing transport pilot and fighter conversion training. These arrangements were put in place in 1950 and 1951 respectively. The conversion unit based at Mauripur made use of RPAF's dual-seat Furies and Tempest aircraft to convert pilots graduating from flying training at Risalpur to RPAF's front-line fighter aircraft of the time. The dual-seater Fury was considered close enough to allow later transition to single-seater Tempest IIs and perhaps even an easier transition to single-seat Fury aircraft itself. The arrangement with AST followed RPAF's own efforts for fighter conversion which first saw the stationing of two Tempest II aircraft at Risalpur to allow new pilots familiarity with the cockpit and some taxi practice. Later on in October 1948, RPAF established 14 Squadron at Peshawar which though designated as a fighter-bomber squadron was tasked with the training role of converting pilots to fighter and transport roles besides training of navigators and air signallers. The unit was originally equipped with a mix of aircraft to fulfil this role including six Tempest II (four borrowed from Nos. 5 and 9 Squadrons and two probably allocated from Risalpur flight), two Dakotas from 6 Squadron and a single Harvard from communication flight. However, within three months the unit was number plated.[23] Later on, as part of efforts to nationalise, RPAF would take over both the fighter and transport conversion courses from AST.

The fighter conversion course was based on RAF standards and was structured around a few dozen sorties. A trainee had to show competency with basic battle formation manoeuvres, basic fighter combat manoeuvres, high and low-level navigation, and gunnery including rocket firing and bombing. The course also emphasised strong familiarisation with the aircraft including receiving a minimum of three hours of cockpit drills and checks blindfolded to make a pilot fully conversant with starting and switching off the engines, fast taxing, and use of breaks. The normal and emergency operations of undercarriages and flaps lowering, actions needed for exit, and abandoning the aircraft in case of inflight fire were also included.

Accounts from veterans show that the fighter conversion unit struggled significantly with the aged Tempest IIs it was operating. Some pilots considering the conversion course to be the worst part of their career. Air Commodore Sajad Haider who was part of 13 GD course which joined the first fighter conversion course run entirely by RPAF, shared the following with the authors:

> …the Tempests were dilapidated, war-beaten to the point that one of the incidents I recall when P.O. Nisar Chughtai called up ATC (Air Traffic Control) and said, "My throttle has come out in my hand,", Tower: "Then use it". Chughtai: "But it's out of

A group of RPAF pilots from the fighter conversion course in front of a Tempest II used for that purpose. (Farial Sikander)

> quadrant and am stuck at high settings unable to reduce speed for landing." So, one of the flight commanders, either Jan Mehmood or Gottings, got airborne in a hurry and helped him reduce speed by trading it for height, lower flaps and then slowly brought him to land. Another time one of us while practicing rolls found something drop out from the front. It was the battery. Can't recall what happened but it landed safely. One day as I approached my assigned Tempest, I found a large panel on the fuselage was a tin piece cut out from the 4-gallon kerosene tin which had sun embossed – a Japanese container we had seen often. I foolishly went into the hangar to point out to the old and famous Flt Lt Ramzan Ali, the pock-marked face and stern engineering officer, told him what I saw on the aircraft fuselage. Without looking at me he said in chaste Punjabi, "Urana aye te ura, nahin tey babey kol ja (If you want to fly then go fly, otherwise go to your mother,)" Ha ha, I went and flew….[24]

For basic flying training at Risalpur, RPAF also sent selected aircrew to the RAF's Central Flying School (CFS) for an all-purpose instructor's course to help lay the foundations for a robust flying training program. The connection between Risalpur and CFS was further strengthened, and arrangements were established where CFS teams would regularly visit Risalpur for grading purposes. This opportunity to benchmark itself against RAF standards at CFS and professional interaction with RAF allowed RPAF to offer a high-standard flying training program at Risalpur. RPAF veterans who served as instructors at Risalpur and went through instructional training at CFS had a unanimous opinion that training programs offered at Risalpur were as well structured as CFS. One aspect where perhaps Risalpur suffered a bit, as per one veteran,[25] was the standard of flying discipline with instructors. RPAF's overall swashbuckling culture in its initial years cast its shadow even on a unit that otherwise emphasised a methodological approach.

At the same time, the existing cadre of instructors was strengthened by officers from the RAF seconded to RPAF and the recruitment of experienced Polish pilots who, during the Second World War, had served with Allied air forces.

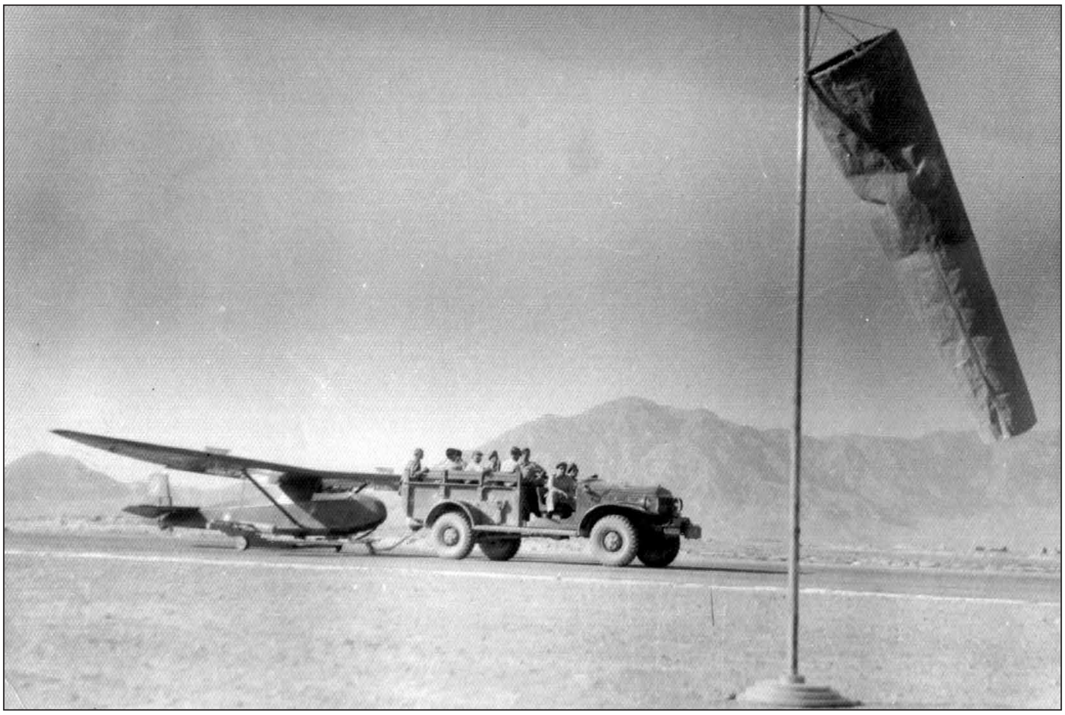
Besides flying training, technical and maintenance training was an equal or an even more significant challenge. The most elementary of RPAF training schools was the Recruit Training School which inducted new ground crew joiners to RPAF and provided basic training for different technical and non-technical streams. The school was first established at Drigh Road and then moved to Kohat, followed by a move to Lahore, which was expected to be its permanent base. The school started taking 90 to 100 recruits a month for a five-month course, 80 percent of whom were expected to move to Technical Training School at Drigh Road, and the remaining were to pass on to non-technical training streams or ad hoc courses.

The Technical Training School was set up for 1,200 trainees, a figure expected to be achieved by around 1949/50, and started first with approximately 200 trainees. A Central Trade Test board was set up, manned by RAF-seconded officers to recategorize RPAF airmen from different trades as per RAF standards.

A review of the technical trades training was also undertaken to review the feasibility of achieving targets. Steps were taken to initiate a broader local training capacity for the trades required by the RPAF besides technical training. Some initial steps were ad hoc, with 11 officers who had completed initial training at Risalpur joining 101 MU for Drigh Road for a three-month equipment course besides 20 airmen. By the end of 1948, the Technical Training School had 735 men under training along with 228 who had completed their training and had passed out in small batches of various lengths given partial completion of their training in pre-partition RIAF. At the same time, the length of specific courses was reconsidered and was shortened to 40 weeks from the standard 52 weeks by eliminating subjects like liquid-cooled engines as they had no relevance for RPAF. The courses included a basic training section and general education on subjects with technical relevance like mathematics, physics, drawing, etc. The course duration was too short to allow for more general education, and other challenges included basic education standards of recruits, which were not on par with RAF standards. Technical Training School also suffered from a lack of instructional equipment and instructors.

Besides the before-mentioned training institution, RPAF established some other training facilities in the first two years. These included a School of Admin Training (at Mauripur), Signals and Radar School at Malir (tri-service), where UK's International Air Radio Limited provided the training staff, and a Medical Training School (at Chaklala).

As mentioned before, Air Service Training Ltd (AST) had set up a Multi-Engine Conversion School to train personnel for RPAF volunteer reserve, civil airline pilots, navigators, and radio operations. The school aimed to adhere to International Civil Aviation standards and provided instructional and servicing staff for two years. AST,



Another Shaheen Air Scouts Glider. The Shaheen Air Scouts and University Air Squadrons contributed to RPAF's personnel requirements. (Kamal Butt)

A Shaheen Air Scouts Glider. (Kamal Butt)

originally established in 1931 (and still in operation), was already well known for its training programs for civil and military pilots across several countries. It would also set up an engineering apprentice program for RPAF at Mauripur besides offering training programs to RPAF at its UK facilities. In 1950 RPAF had managed four hundred positions for the training of apprentices. Several RPAF officers and airmen trained in Aeronautical Engineering and Radio by AST at Hamble later received advanced training at the College of Aeronautics at Cranfield, UK, which had eight vacancies allocated to RPAF in 1950. Later on, two boarding schools in Pakistan were set up by AST to act as 'feeder' schools for RPAF's recruiting needs in the long term. The Multi-Engine Conversion School like the Flying College at Risalpur established international collaboration, which forced it to maintain a systematic training structure and adhere to international standards, a practice that served RPAF's training of transport pilots well.

Another fruitful scheme initiated by RPAF's second Air Commander, Air Vice Marshal R. L. R. Atcherley, was the setting up gliding facilities under an air scout movement named Shaheen Air Scouts. This scheme was open to boys from 13½ years to 18 years. A Central Gliding School was formed at Drigh Road Karachi, and the scheme soon expanded to 2,000 volunteers under training and covered both wings of the country with a total of 25 air scout troops. Well-equipped Air Scout Centres were set up in different schools and colleges of the country to encourage students to join the movement. In the first instance, the school gave gliding training to RPAF pilots selected as future instructors for air scouts. The scheme attracted support from the highest level of government, with the then Governor-General Khawaja Nazimuddin awarding wings to the first batch graduating in July 1950. Later, as the effort was expanded, the scheme was reorganised and renamed Shaheen Air Training Corps (SATC), with Wings established in several cities. SATC training now extended over two phases of two years each and covered subjects like service customs, aero modelling, and training as ground and aircrew. Competitive training camps were regularly organised in different parts of the country, and several gliding records were established due to this activity.

Another institution aiming to produce talent for RPAF was the University Air Squadrons set up at Dacca, Lahore, Peshawar, and Karachi using Tiger Moth aircraft from RPAF, where the initial flying training had moved to Harvards. Students enrolled in University Air Squadrons were given flying training and were also taught subjects like navigation, meteorology, aeronautical engineering, radio, radar, service administration, etc. After a short probationary period, successful students were inducted into RPAF Volunteer Reserves as Pilot Officers. RPAF graduated three batches of volunteer reserves from September 1951 to December 1952, with local civilian flying clubs enrolled in the effort. At least for the North India Flying Club (later Lahore Flying Club), 80 cadets graduated from the club and joined RPAF for further training. RPAF's former commanding officer of No. 5 Squadron in August 1947, Squadron Leader Zahir Ahmed, served as Chief Flying Instructor of the club at the time.

To meet RPAF's more immediate needs, support from the RAF in terms of trained manpower, especially for technical manpower and senior command and staff positions, was considered necessary. RPAF's first few chiefs till 1957 were from the RAF and are the most prominent examples. They were supported by RAF-seconded senior officers who filled the position of their deputy (initially called the chief of staff) till 1954, when the first Pakistani officer took over (Air Commodore Haider Raza, later Air Vice Marshal). RAF officers also filled other important positions like commanding No. 1 Group, Flying College Risalpur, and posts like Senior Technical Staff Officer.

Nevertheless, several challenges were faced regarding recruiting RAF personnel given service conditions like accommodation and compensation levels. Competing offers from India for recruiting RAF volunteers forced Pakistan to reconsider the benefits offered for service in the country. Some organisational issues were also faced during this recruitment effort, including some RAF airmen expecting to serve only in an instructional capacity. Adjusting to Pakistan's weather conditions, and RPAF's tradition of more onerous parade duties was also problematic for some. RPAF also tried to recruit civilian instructors from the UK to support its personnel need, an experiment that was less than successful due to ineffective recruitment processes.

A vital issue for RPAF was that in the event of hostilities with India, the seconded RAF officers would have "stood down" under instructions from UK government. A solution was found in hiring Polish-origin officers and airmen from the UK with experience serving in Allied air forces during the Second World War. For Polish airmen, the occupation of Poland by the Soviet Union and less than stellar treatment by their wartime allies resulted in Pakistan being a viable option, at least for an interim period. Many Polish airmen joined RPAF and served under RPAF's ordinary conditions of service, thus partially mitigating the problem RPAF had with RAF-seconded personnel. For most of them adjusting to living conditions in Pakistan was challenging and their stay with RPAF turned out to be temporary.

Nevertheless, the service of Polish airmen is remembered with great fondness in Pakistan. Air Commodore Wladyslaw Turowicz, who served for almost two decades and later retired as Assistant Chief of Air Staff Maintenance, is the most well-known. Besides serving as a critical deputy to the Commander-in-Chief of the air force, he later headed Pakistan's space program. His wife joined the Shaheen Air Corp and taught glider flying to several budding pilots. Others like Squadron Leader Julian Kaimierz Zuromski held essential positions like squadron commander of fighter-bomber squadrons, instructors in fighter conversion, and other units.

An important consideration for Pakistan was setting up of an aircraft industry in the country. Such a venture would support both RPAF and civil aviation in the country. Subsequently, Pakistan Aviation Limited (PAL) was set up as a joint venture between the Government of Pakistan (with majority ownership) and remaining ownership with two Pakistani airlines, Orient Airway and Pakair (which subsequently withdrew from the venture and sold its share to the government). Technical support was provided by Airwork Ltd of UK, which competed for this contract with a US company, namely Transocean Corp. The facility was set up at the airship hangar (also called Zeppelin hangar) at Drigh Road and started operations in October 1948. PAL's first order was to overhaul Dakota aircraft available in Pakistan for military and civilian purposes. It handed over the first overhauled Dakota aircraft to RPAF shortly afterward. At the time, the company had been provided with a dozen Dakota aircraft from civil and RPAF stocks for overhauling and aimed to work on the 40 Dakotas left as scrap by RAF at partition. That the hopes for PAL were ambitious is indicated by a statement made by its work manager Squadron Leader Safdar Qureshi that the company could start building aircraft within two to three years. Unfortunately, the country would need to wait for more than two decades for its first locally produced aircraft.

Units and Organisation

To meet organisational needs, RPAF created No. 1 Group RPAF which was responsible for the operations of all flying squadrons. Fighter flying was concentrated at Peshawar with No. 5 and No. 9 Squadrons operating as a Fighter Bomber Wing; the wing was not numbered. On 1 November 1948, No. 2 Group was formed and was tasked with the "Air Defence of Pakistan." The Director of Air Operations, Wing Commander B.K. Dass was appointed as the Officer Commanding (OC) of No. 2 Group. The staff initially consisted of the OC and a few airmen. Initially, the Group's work was restricted to planning, and the OC was assisted by an army officer who had spent some time in RAF Fighter Command Operations Room. Some months later, No. 2 Group was disbanded, and Air Headquarters and No. 1 Group were also reorganised.

Air Headquarters was reduced in strength to reflect the needs of the higher direction of the service. The strength reduction was used to increase No. 1 Group's capacity, which was made responsible for command and control of all units in North-West Frontier Province and West Punjab. No. 1 Group was now given operational, maintenance, and administrative control over several stations like Peshawar, Kohat, Lahore, Risalpur, and Chaklala. For other units like the AOP Flight, selection teams, and forward repair units, No. 1 Group exercised administrative control. No. 1 Group was also given its own operations, training, intelligence, signals, administrative and maintenance functions to carry out these responsibilities and therefore practically acted as a subordinate Air Headquarters.

The first new fighter squadron raised by RPAF after independence was No. 14 Squadron which was raised on 1 November 1948 with Squadron Leader Khyber Khan as the OC. For Khyber Khan, raising of the first new squadron after independence meant that the squadron had to be as good as the two existing squadrons. A simple addition of the two existing squadron numbers made Khyber Khan request the number designation 14 for the new squadron. Raised as a fighter-bomber squadron, it was initially tasked to serve as a conversion unit for all roles within RPAF. It was equipped with various aircraft, including six Tempest IIs, two Dakotas, and one Harvard. The squadron's first incarnation proved short-lived, and in January 1949, the squadron was number plated, and the conversion role was distributed across other units. The squadron was later reactivated in December 1949 and was reequipped with newly received Fury FB.60 aircraft. Over time the squadron's strength rose to 33 Fury aircraft plus some Tempest IIs, T-6Gs, Auster, and Dakotas.[26]

The next fighter unit raised was No. 11 Squadron which was to serve as a light bomber unit equipped with Bristol Brigands. This unit was raised in January 1949, only to be number plated shortly after the decision to acquire Brigands was reversed. The squadron would be reactivated in the summer of 1951 as the first jet fighter squadron of RPAF when deliveries of Supermarine Attacker aircraft started. The squadron was initially reactivated at RPAF Station, Mauripur but owing to a lack of office accommodation and technical facilities; it was moved to RPAF Station Drigh Road within three months. It remained the sole operator of jet aircraft in RPAF till the start of the mutual assistance program of 1954 with the United States, which saw deliveries of T-33s and later F-86 Sabres.

A little later, in March 1950, No. 12 Squadron at PAF Station, Mauripur, was raised with the role of operating RPAF's offensive punch in the shape of recently acquired Halifax bombers. As mentioned, RPAF's first attempt at developing a long-range strike capability was less than successful. The unit took up additional roles, including operating the Viking and Dakota VIP transport aircraft. RPAF's air communication flight, which operated Austers, VIP duty Dakotas and Governor-General's Viking aircraft, merged with 12 Squadron. The squadron was later re-tasked as a composite squadron and carried multiple duties, including target towing with Tempest and Furies while operating multi-engine types, including Freighters.

Conclusion

RPAF had inherited minimal resources at its birth, and the developing security environment necessitated a need to have a more capable air force. This meant that multi-pronged efforts should be made to address the existing gaps in doctrine, equipment, manpower, and organisation.

RPAF's most critical shortcoming was the lack of adequately trained and experienced manpower in sufficient numbers. During the first few years, efforts were mainly concentrated on building a base to create trained manpower, the air force's administrative and operational structure, and improving its equipment. These included setting up a sound foundation for flying training at Risalpur, followed by technical training institutions. International collaboration to achieve these goals allowed a good base for future expansion.

RPAF's challenges and response are illustrated by its manpower position as of 31 March 1949 (18 months after RPAF's birth). The manpower requirement was estimated at 219 pilots with only 119 pilots on strength, including seven seconded from RAF. While this was an impressive increase of more than 80 percent, it was still about half of the stated requirement. The positive news was that at the same time, RPAF had about 133 pilots under training both in Pakistan and abroad, so the service could be in a position to meet its requirements in the months ahead. Similarly, for the navigators' branch, RPAF at the time had a shortage of 10 against a stated requirement of 32, with eight under training.[27] These statistics indicate that RPAF was still not in a position to meet its organisational targets but had progressed significantly. In the months ahead, RPAF could hope to overcome significant gaps in its manpower requirements; however, in terms of the experience of its personnel, the service would remain very young till those recently trained and those under training would build up sufficient operational experience.

Similarly, in terms of equipment, RPAF was able to induct a large number of new aircraft and was able to step into the jet age. Setting up units like the Gas Turbine Section meant a support base for maintenance of the latest equipment was being built. Similarly, raising of new squadrons and restructuring at the Air Headquarters and No. 1 Group level indicates that parallel efforts were made to provide the necessary organisation for the service.

The RAF-seconded senior leadership played a positive role by emphasising the need for the service to be built on a foundation of sufficiently trained personnel and adequate support infrastructure. They also provided the much-needed senior command experience and maintained relations with RAF. However, the conflict of interests between RPAF and their home country's commercial and other interests resulted in questionable acquisition decisions with negative consequences for RPAF.

The developments discussed in this chapter would provide RPAF with a good base to build upon in the years ahead. Nevertheless, some significant issues still remained; these will be discussed in the last chapter of this volume after an overview of RPAF's operations in its initial years in the following chapter.

4

OPERATIONS

Air Marshal Zafar Chaudry in conversation with Air Commodore M.Z., Masud

> In hindsight, looking back at that period, although we did not know then, things in the Indian Air Force immediately before the partition when I was a junior officer, a pilot in a fighter squadron, and instructor at Ambala, things were pretty haphazard. No one knew what it was all about, what did we want to achieve, what kind of force, what aims and objectives, what we wanted to do, how would it be put to use in a war of some sort; these things were very, very confused. This is my impression now looking back. For instance, although there was a good deal of emphasis on pilot ability, particularly during flying training courses, and a large number of pilots were weeded out because they could not fly well enough, that was all very well and correct, but we did very little weapon training. As we know, an airplane is of no use unless it can discharge its weapons in the right direction, at the right place, at the right time. Now we did some training during the training courses, but in squadrons, it was a completely neglected field. During the one year that I spent in No. 7 Indian Air Force squadron, I did not fire a single bullet, would you believe it, neither air to ground nor air to air, and nor did anyone else. I did not do any night flying at all; anyone who had landed after the sun had set when there was considerable light otherwise was considered a very good pilot. Another yardstick was anyone who pulled his wheels up very quickly after take-off was considered a good pilot; anyone who did a couple of loops over the airfield was a good pilot, that kind of childish and juvenile attitude. I did not know, and nobody had told me at that stage, what I was supposed to do when I got on an airplane, what was I training for, what was my objective.
>
> I think in fairness, it must be stated that this state continued several years after the partition. Although I was on the flying training side for the initial three years after the partition, I think I knew what was going on in fighter squadrons; there was very little realistic training done, very little armament training done.
>
> I remember during the war, some Indian officers had joined the air force before the war, they considered themselves to be the "real thing," the cream, the founders of IAF, and the rest of us were "johnnies come along lately" who jumped on the bandwagon during the war. When the war ended they said we are back to peacetime. And we said what shall we do, and they said we would have fancy mess kits, we would have bands, parties, and dances, and hardly anyone spoke about flying, what we will do in the air and how we would train, the emphasis was, for want of a better word, on graces in life and style and rather than actual functional capability…[1]

Air Vice Marshal Khyber Khan, in conversation with Air Commodore M.Z. Masud:

> We had just come out of WW2, and flying discipline was at its lowest ebb; it was usual to come back from a sortie and beat up the airfield. Sometimes it was done with the permission of the air traffic control, we would give a radio call, and the ATC would clear up the airspace around us. At some of the Indian Air Force airfields, though commanded by RAF officers, it was usual to come in low and fast over the airfield and zoom up. When the

> Indian (or Pakistan) Air Force came up in August 1947, this tradition continued, so the standard of flying discipline was average at best. The restrictions that we see now, the efforts to enforce flying discipline came in later, in the mid-1950s. For example, you converted to an aircraft, and you were just given a pilot's manual. There was hardly any briefing or monitoring by senior pilots; it was left to the individual to take as much out of it as he could. The written material on flying was practically not there, and whatever there was not adapted to local conditions.[2]

The excerpts above succinctly explain the organisational ethos RPAF inherited, which would affect its development as an operational force. This chapter will discuss RPAF's operational capability given its inheritance and developments detailed in the previous chapter. We will also discuss RPAF's initial doctrine, operational training, and flight safety culture to assess its effectiveness as an air force in these early years.

As mentioned in an earlier chapter, the first guidance that RPAF's air commander received from the country's political leadership was that the service's role would be watch and ward duties on the country's western border, especially for the tribal belt. The guidance was most definitely influenced by the thought and experiences of British India. The newly independent country's leadership neither had the experience nor the opportunity to articulate a considered defence policy. Developments immediately after independence and the security paradigm that Pakistan was confronted with would force their hand soon enough. The new country had to squarely face the need for credible military capability.

Doctrinal Issues

The first thoughts on what airpower meant for Pakistan are apparent in the words of Air Commodore D.L. Amlot, Chief of Staff, Royal Pakistan Air Force (May 1949 to May 1951):

> Look at your map. Look at the long borders we have to defend. Look at the two landmasses of East and West Pakistan, separated by a thousand miles. Never was there a military defence problem which so much needed a strong air force … our road, rail, and sea communications are all long and vulnerable: but a strong air force cannot be hindered in its passage wherever it wants to go. Furthermore, we must have an air force that can hit as well defend. Pakistan will not aggress, but it is often the fear of reprisal that intends those not so well disposed. I can only hope with you that men like Smuts are right in hailing the atom bomb as a possible harbinger of peace, that even the most evil-minded men in our muddled civilization will hesitate and count the cost before they bring another world war on this unhappy globe … we learned by hard experience the need for the coordination of the efforts of the three fighting services at every step and that all major decisions on the operational policy must be taken by the Chiefs of Staff acting together and not by the Service Chiefs acting alone. This is a vital point which I wish to make clear.
>
> The two main schools of thoughts regarding employment of air forces are whether you believe that air has a mission of its own or whether you believe it is merely an adjunct to sea and land forces.
>
> He maintained that independence of the air force was necessary as had been amply borne out by the hard facts of the last war.
>
> We emerged from the Second World War with certain basic beliefs in the use of air power. We said that in war we must win the air battle first and that air superiority was the pre-requisite of success on land or sea. I venture to say that if the United States forces are able to hold these airbases (in South Korea) the aggressor will not continue to hold the initiative very long in the face of air power. It is however to the eternal credit of the airmen that they did delay the North Korean advance so that a bridgehead could be formed and it can be stated without qualification by responsible observers that without the 'air' there would be no United Nations opposition in Korea today.[3]

The statements above represented the then current state of airpower theory with the main argument that the air needs to be an independent force with clear objectives of its own. Emphasis was on an air force's ability to deploy across geographies, air supremacy's paramount importance, and air dimension's use to influence outcomes. These lessons were learned by RAF in the Second World War and were inherited by RPAF.

This may appear as an abstract point with unclear relevance to events, but the importance of the fundamental concepts of air power cannot be overstated. We can draw a comparison with the development of China's People's Liberation Army Air Force (PLAAF), which also came into existence in 1949, about the same time as the RPAF. For the PLAAF, the employment of airpower followed the requirements of infantry-centric ground forces and air defence force tied to specific geographical regions. An air force organised on the principles of ground forces and emphasising air defence of an area would then closely follow the dynamics of a ground war. This makes for a very different understanding of airpower and would not allow exploitation of the full range of capabilities an air force can offer to achieve larger military objectives.

The strategic doctrine an air force adopts is what it translates into operational capabilities. This is achieved through establishing priorities, objectives, application of resources, definition, and assignment of specific roles and tasks to various components of the force. In parallel, development and training for how best to fulfil such roles and tasks takes place. All these later activities fall into what can be classified as operational and tactical doctrines of the force.

RPAF never established an official doctrinal document, but the inheritance from RAF meant that its aspirations as an independent air force and the belief that an air arm has a distinct mission within overall strategic and joint service objectives was a given. The challenge was to build up an organisation that could translate this intent into a reality.

Watch and Ward duties and Kashmir

RPAF's first shots in anger were fired in May 1948 against the infamous Faqir of Ipi (a name well known to the RAF in India) and his rebels in the tribal regions of northwest Pakistan. The tribal region had been quiet, and the regular army had been withdrawn. The only government presence consisted of Civil Armed Forces (paramilitary units) and a small air detachment of usually two Tempest aircraft at Miranshah. It appeared that tribesmen intended to be loyal to the Government; however, towards the end of May 1948, the almost legendary figure of the Faqir of Ipi, along with his rebels started making trouble again. The rebel leader seemed to be on the warpath, and subsequent evidence showed that he was aided and abetted by India with the ultimate aim of clearing Government forces from the area and declaring himself as the ruler of the Waziristan area of the region.

Active operations started on 26 May when the paramilitary force Tochi Scouts' parade ground outside Miranshah fort was machinegunned. An XXX call was made, which was answered by the RPAF detachment there. On 8 June, the Scouts became engaged with a force of 200-plus rebels trying to block a road. Two Tempest aircraft engaged the rebels in support of the Scouts. Three days later, the insurgents returned with forces twice as strong, and the resulting battle lasted 11 hours, with RPAF providing nine sorties in support of the Scouts. However, another government position, Dalta Khal Post, fell without a shot being fired. Encouraged by this, Ipi's forces surrounded Tal Fort, which was holding a strategically important position. Again, air support was called for late in the evening of 15 June, forcing the rebels to withdraw. The insurgents now tried their luck with Fort Boya, which did fall to the rebels despite air support being provided. This was a significant setback for the Government in the region and forced a meaningful response from the state against hostile forces. The action continued from 22 June to 8 July and included air support against hostile positions and the Faqir of Ipi's "great gun" (a 3.7-inch howitzer), forcing him to declare a ceasefire.

This operation was led by Group Captain Haider Raza and included a total of 60 sorties of 39 hours and 50 minutes (excluding reconnaissance), expending total ammunition as shown in Table 7.

Table 7: Weapons used in operations against the Faqir of Ipi

Weapons	Quantity
500lb bombs	16
40lb bombs	56
60lb rockets	105
25lb rockets	3
20mm cannon	4,600 rounds

The Governor of the North-Western Frontier Province, Sir Ambrose Dundas, wrote to Group Captain Raza stating:

> I am sure you will be pleased to know that I have been hearing excellent accounts of the part played by the Royal Pakistan Air Force in dealing with the recent disturbances in North Waziristan. My informants, who are critics of many years standing, tell me that your pilots were always ready at a moment's notice and that their map reading and the accuracy of their fire were first-class. This is of course no more than we expected, but I am nevertheless delighted to hear it and feel sure you will be the same.

For political reasons, no press coverage was provided of the use of the Air Force in these operations, although the operations themselves were given publicity.[4]

Weeks before these events, RPAF supported Operation Curzon, which included the withdrawal of army units from Ramzak in North Waziristan, given that no immediate threat from tribals was expected in the area. Tempests provided air cover over the area in the shape of 47 sorties. The effort also included transport sorties by Dakotas of 6 Squadron and the AOP flight's Austers flying communication and recce sorties. However, besides providing cover for the operation, no offensive missions were part of this effort.

Dakotas played an important role in keeping a supply line open during the early years. Here an RPAF Dakota is seen from the cockpit of a trailing aircraft. (Daud Shah via Kamal Butt)

Around the same time, the dispute in Kashmir had turned into a full-fledged rebellion by the local population against the ruler of Kashmir. Volunteers would aid this struggle from the Pakistani side and soon saw an intervention by the Indian Army. Given how existential the freedom struggle in Kashmir was for the state of Pakistan, acceptance of accession of Kashmir by the ruler to India would mean negation of the very principles which led to the creation of Pakistan, and resolute response from Pakistan was necessary. This response came in the shape of first volunteers joining the local population's rebellion against the atrocities being committed by the ruler's forces and later in rear-guard defensive action by the Pakistan Army in response to airlifting of Indian Army forces to Kashmir and its offensive action against the freedom fighters in Kashmir. The area was extremely rugged and demanded air transport (including airdrop) and offensive actions supporting ground operations. Being far better equipped, IAF could provide more effective support to Indian forces. The conflict swung back and forth indecisively. A United Nations-mediated ceasefire took hold on 31 January 1949.[5]

This developing situation in Kashmir placed RPAF in a highly precarious position. A marginal force at the time, even a very generous analysis would show its ability to undertake combat operations was very limited. In this situation, RPAF resorted to air

ROYAL PAKISTAN AIR FORCE
VP907
16-X

RPAF Dakota, along with an automobile it could very well have transported. (Kamal Butt)

Table 8: Availability of PAF aircraft, 22 December 1948[7]

Squadron	Unit Establishment	Strength	Reserve	Total
Fighter Aircraft				
Tempest Squadrons				27
5 Squadron	8	8		
9 Squadron	8	8	8 unserviceable	
14 Squadron	8	3		
15 Squadron	8	Nil		
Dual Fury				
14 Squadron		1	Nil	1
Transport Aircraft				
Dakota – 6 Squadron	10	6	8+11 in airship shed unserviceable 2 serviceable	31
Dakota – Com Squadron	1	4		
Halifax – 6 Squadron	Nil	2	Nil	2
Bristol Freighter	Nil	1	Nil	1
Viking – Com Squadron		1	Nil	1
Training Aircraft				
Harvard – RPAF College	23	17	3 serviceable 13 unserviceable	36
Com Flight		2		
Com Squadron		1		
Tiger Moth – RPAF College	10	9	4 unserviceable 6 cased	19
Auster – Com Flight	Nil	4	3 serviceable	38
Auster – AOP Flight	4	6	25 unserviceable	
Fox Moth			1 unserviceable	1

Note that the above availability table indicates RPAF's strength in general. Changes in unit strengths would occur periodically and regularly on account of aircraft availability and administrative decisions like allocation of a Harvard aircraft and two additional Tempests to 5 Squadron in January 1948.

supply missions, which started in December 1947, with 6 Squadron RPAF only having two Dakotas available. The missions began in earnest with one aircraft sent to Risalpur for the purpose; with limited crews and bare minimum maintenance support, the well-used Dakotas had to contend with the hazards of high-altitude flying in mountainous terrain, valleys, and adverse weather conditions. In addition, 6 Squadron aircrews faced the danger of marauding Indian Air Force interceptors while RPAF fighter squadrons could not provide escort for fear of escalating the conflict to their disadvantage. RPAF Air Commander reached a tacit agreement with his counterpart at IAF where it was understood that IAF would not attack aircraft flying over Gilgit but could attack aircraft sitting on the ground. On 4 November 1948, an RPAF Dakota was fired at by two RIAF Tempest IIs, resulting in one fatality. Still, the pilot, Flying Officer M.A.K. Dogar, managed to evade the fighters and, in the process, earned RPAF's first gallantry award. On 6 November, Air Vice Marshal Perry-Keene received a signal from Air Vice Marshal Mukerjee of the IAF informing him that he regretted that he had to order all RIAF aircraft to destroy without warning unidentified aircraft flying over Jammu and Kashmir and that Air Marshal Elmhirst was on tour. This incident forced RPAF to revert to night missions flown on full moon nights and later press in the recently acquired Halifax aircraft. Another notable mission flown some months earlier by an instructor at Flying College Risalpur was on 14 April 1948, when Squadron Leader Khyber Khan flew a Harvard aircraft, with a mortar strapped in the back seat, to Skardu. The mortar was used against enemy forces entrenched at Kharphocho Fort in Skardu, a fort that was holding out against troops from the Pakistani side and threatened lines of communication.

RPAF's choices are well described by the following comments made by the Air Commander at the time:

1. At an emergency meeting of the DCC (Defence Committee of the Cabinet) held on 17 November, the Defence Minister directed the Air Commander to prepare in consultation with the C-in-C, a plan for the use of the Air Force so that, if the Cabinet decided, it could be used for combatant purposes this could be implemented without delay.
2. At the meeting on November 9 the DCC decided that aircraft on the Gilgit airlift should have fighter escorts and H.M.G. (Her Majesty's Government) should be informed that this action was purely a defensive measure.
3. If the Air Force was employed offensively its task would be to help the Army halt the Indian offensive.
4. In its present state of weakness – which will not be remedied until more aircraft arrive from abroad – the Air Force should only be used on vital tasks the successful execution of which would be calculated to turn the battle in our favour. Casualties cannot be avoided and we must face the possibility of losing out our entire Air Force without materially affecting the issue of the land battle. So long, however, as we have an air force it is a threat that the enemy cannot ignore when deploying her Army. It is similar to a 'fleet in being'.
5. The DCC has doubtless weighed up the possibility of HMG and the USA stopping all further deliveries of military equipment to both Pakistan and India in the event of an air war starting.

6. My view is that the Air Force should go to war stations now, improve its aircraft serviceability by reducing its flying and be prepared to strike against vital targets the destruction of which, in the opinion of the C-in-C as directing the land battle and the Air Commander as regards the possibility of destruction, will make the difference between our victory or defeat. It should be all or nothing and I would strongly advise against pinprick use of the Air Force.
7. As regards the Gilgit airlift. A small-scale effort has been achieved using the Halifax on the direct route and by using Dakotas on moonlight nights. If the scale is to be increased fighter escort for day sorties must be used but this would inevitably reduce the scale of effort which could be used for direct participation in the land battle. Out of the small Tempest Forces two aircraft are stationed at Miranshah. In the opinion of Governor NWFP, it would be most unwise to withdraw them. But this would have to be faced if it is the decision to employ the Air Force offensively.[6]

The above view of the Air Commander of RPAF at the time makes for interesting reading. It not only indicates the belief that the air force was viewed as best used for decisive effects, a natural corollary of an air force having a mission of its own. Statements like '… will make the difference between our victory or defeat. It should be all or nothing and I would strongly advise against pinpricks' use of the Air Force.' underscore the importance of concentration of forces in any employment of RPAF in an offensive role.

At the same time, a better summary of RPAF's lack of capability at the very onset is perhaps not possible. That the Air Commander thought he could not even spare two aircraft for the north-western border and candidly admitted the possibility of losing the entire force without achieving anything of consequence explains the weakness of the force very bluntly.

No doubt, the availability of aircraft as of 22 December 1948, as given in Table 8, meant that it was hardly possible for the Air Commander to draw any other conclusions.

Tensions with India continued on and off after the end of the first Kashmir conflict. In 1950/51, there were concerns on the Pakistani side about likely Indian military offensive action given Indian military deployments near Pakistan's border. Counter-deployments took place on the Pakistani side, including deployments of RPAF at forward air bases. Around this time, RPAF looked at possible forward operating bases, which, while in sufficient depth to reduce vulnerability to any enemy land offensive, would still allow RPAF to support the land battle. Sargodha was identified as a forward operating base which was well located in light of this criteria, and steps were taken to make it functional as a forward operating base.[8] Pakistan's preeminent main operating base today, therefore, saw its first use as a forward base in these years when some RPAF units were deployed to Sargodha as part of RPAF's counter deployment.

Besides RPAF's capability limitations regarding operational assets and material support, another significant capability gap was its reliance on RAF officers seconded to the service. IAF had a sufficient number of Indian senior officers, and any British officer essentially provided staff or policy-level support. In the case of Pakistan, British officers and men also held executive positions, which meant they could be the commanding officers or key officers in tactical units, including front-line and support units. In case of hostilities, these officers had stand-down orders, ostensibly to prevent British servicemen from fighting against each other, with the possible result that not only at the higher level but even at the tactical level, Pakistani military units could become dysfunctional. Considerable discussion took place amongst British higher command on how such stand-down orders would be implemented in case hostilities broke out between the two former colonies. It was well recognised that the Pakistani side, especially RPAF and the Navy, would be significantly worse off given greater reliance on seconded manpower.

Operational Flying

In February 1949, Air Vice Marshal R. L. R. Atcherley took over as Air Commander from Air Vice Marshal Perry-Keene and embarked on a reorganisation aimed at providing sufficient infrastructure support to the service and ensuring a balance between operational flying, maintenance, and supply capacity and available manpower. Force development targets were also adjusted to reflect these conditions. To align the availability of technical manpower and spare supplies, it was instituted that each type of aircraft would be allocated the following technical tradesmen before it was declared available to fly.

Table 9: Maintenance manpower allocation per aircraft type

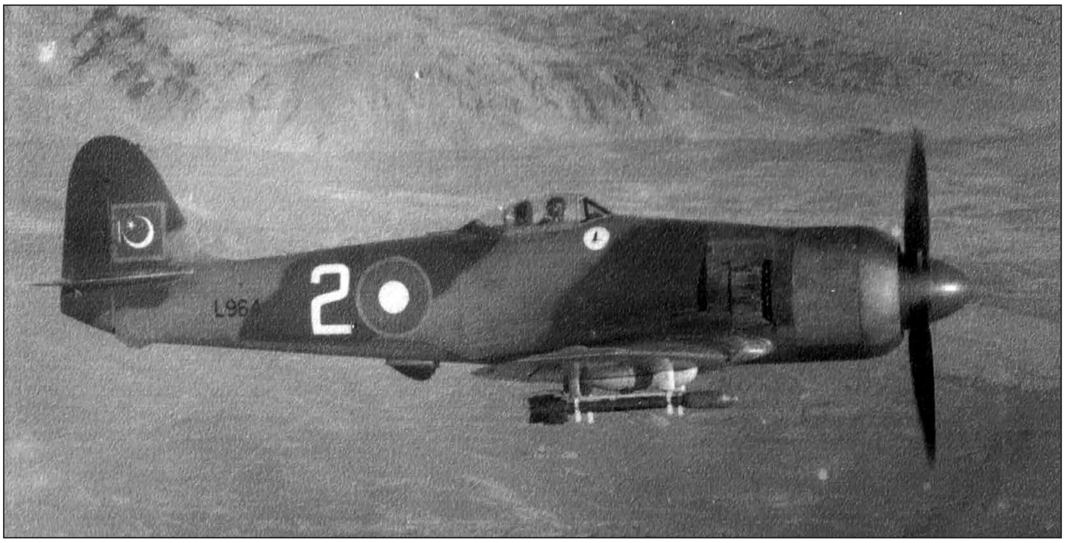
Aircraft	Allocated tradesmen
Tiger Moth	2
Harvard	5
Tempest/Fury	7 (for unarmed) 10 (for operational)
Dakota	16
Bristol 170	12
Brigand	16
Auster	4

At the same time, the acquisition of the Bristol Brigand was reconsidered, and it was decided to cancel the order. For operational pilots, 30 flying hours per month were also stipulated, and the order of battle was adjusted to three fighter-bomber squadrons with eight Fury aircraft per squadron and a reserve of 22 Furies. Until the required Fury aircraft were delivered, both Tempest IIs and Furies were considered interchangeable. For 6 Squadron, a unit establishment of eight Freighters and four reserve aircraft was considered sufficient besides the Communication Squadron flying one Viking, one Wayfarer (a variant of the Bristol Freighter), and two Freighters with a further two of the last type in reserve. At the same time, it was decided that the Halifaxes would be operationalised once sufficient manpower was available for maintenance and the Lancastrians (originally operated by Sydney Cotton) were disposed of. While the above deliveries were taking place, 6 Squadron was to maintain four "in use" Dakotas and two aircraft in reserve to provide 300 hours of flying per month, of which 200 hours would be allocated to transport duties and remaining for training purposes. The squadron was also moved to Lahore as its permanent base.

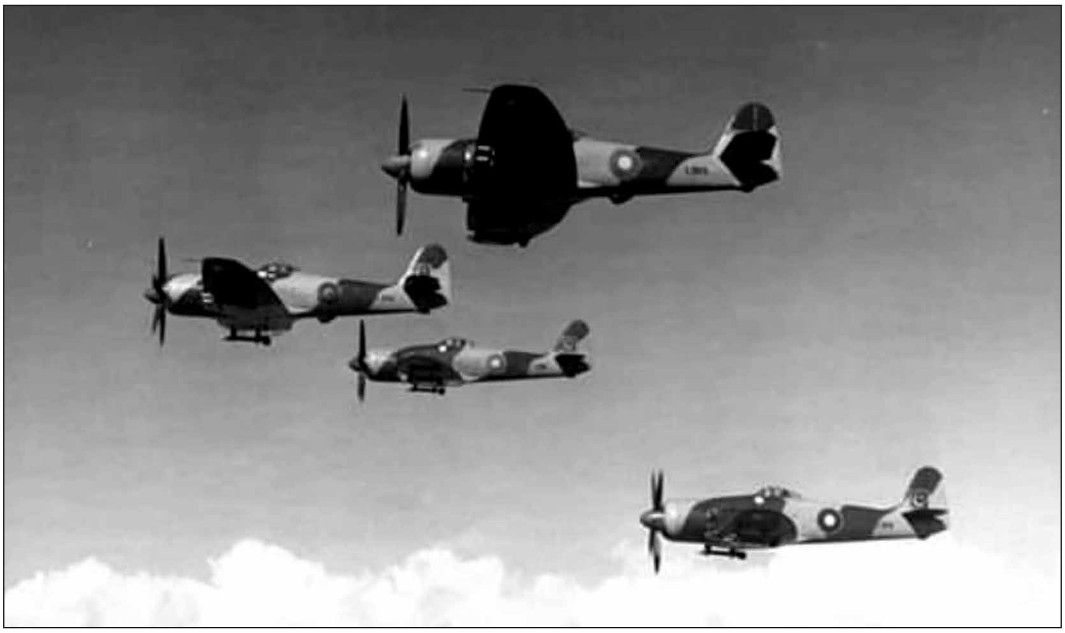
The roles of different squadrons were also identified with the Fighter Bomber Wing tasked for the air-to-air role for air defence of the country and providing direct and indirect support to the Army. The transport squadron was tasked with supporting mobility of the Fighter Bomber Wing, air supply and communication for the Army and the Air Force, and conversion and training for transport and bomber squadrons.

Within the context of the above constraints and guidelines, various log books, other information, and events show that RPAF's operational squadrons started to build a routine centred around operational flying, training, and supporting operational commitments related to watch and ward duties and other requirements.

For 5 Squadron, by December 1947, all pilots had converted to Tempest IIs; by January 1948, the squadron had 10 Tempests and one Harvard on strength. The squadron would undertake several operational commitments like detachment to Miranshah of two Tempest IIs in February 1948 for the usual watch and ward duties. The same month the squadron sent a detachment of four aircraft to Karachi and back for navigation and formation practice. In September 1948, the squadron undertook a naval ops exercise at Karachi some months later. Later, in October of the same year, the squadron would undertake four weeks of exercises, including air-to-ground firing along with 9 Squadron. In December, this would be followed by both squadrons participating in exercises for dive bombing, offensive reconnaissance, and mock attack exercises. The following year in March 1949, exercises with Pakistan Army took place for tactical reconnaissance, artillery spotting and target practice, direct support, and laying of smoke screens, followed by a show of strength flight over the North Waziristan Agency. For 9 Squadron, the routine appears to be similar with regular detachments to Miranshah and periodic exercises.



A Fury armed with rockets. The aircraft proved effective in the counter-insurgency role and would carry on even after RPAF/PAF had moved on to jets. One squadron remained equipped with Furies until 1964 for this role. (Kamal Butt)



A formation of rocket-armed Furies. (Kamal Butt)

Later on, when 14 Squadron was formed, its activities also show periodic exercises and routine detachments to Miranshah. An idea of the level of flying activity that was taking place at the time can be inferred from the fact that for the 14 months starting October 1950 to the end of November 1951, 14 Squadron flew 2,641 hours on Fury aircraft and additional 13 hours on a sole Harvard allocated to the squadron.[9] It is unknown how many aircraft or pilots the squadron had at the time, but we can assume that the strength at the time, given Fury deliveries, would be around a dozen aircraft. This would be a strength at levels similar to the other two fighter squadrons and reflect a fair bit of flying activity for the squadron.

RPAF's regular detachment of Tempest IIs and later Furies at Miranshah for the traditional watch and ward duties, which were shared by both fighter squadrons and later by 14 Squadron, typically consisted of a few aircraft. The aircraft were based at Miranshah fort and would be rolled out from the fort gates every morning for operations and then pushed back at the end of the day. The pilots looked forward to these detachments as it allowed them to be away from senior supervision and the strict military routine of Peshawar station and fly to their hearts' content. Most experienced a camaraderie that they would look back on fondly years later. The freedom of these detachments to fly the 2,400hp powered beasts of fighters like the Tempests and Furies and the nearby firing range offered an experience very few young men get to savour. The adrenaline rush from getting a XXX call from the Tochi Scouts, suddenly under fire from unruly tribals, and scrambling to provide air support to ground forces interspersed irregularly with the routine of watching your comrades fly off in a Tempest or a Fury to practice their gunnery skills at the firing range. Comfortably perched on chairs and snacking, the pilots would watch how well their squadron mates were doing, cheering on successful gunnery passes and commenting on how they would do better when their turn to fly would come.

Sometimes hair-raising incidents would take place, which would bring home that a low-intensity conflict can also be dangerous; Air Commodore P.D. Callaghan narrates:

> Faqir of Ipi brought in a howitzer; we were all in the officer's mess when we heard the shells from the howitzer landing and realized that all the aircraft were in the open. We went outside to start pushing the aircraft next to the fort walls. These aircraft were loaded with bombs and rockets, and that is when a shell landed right in the middle. Fortunately, it did not go off.[10]

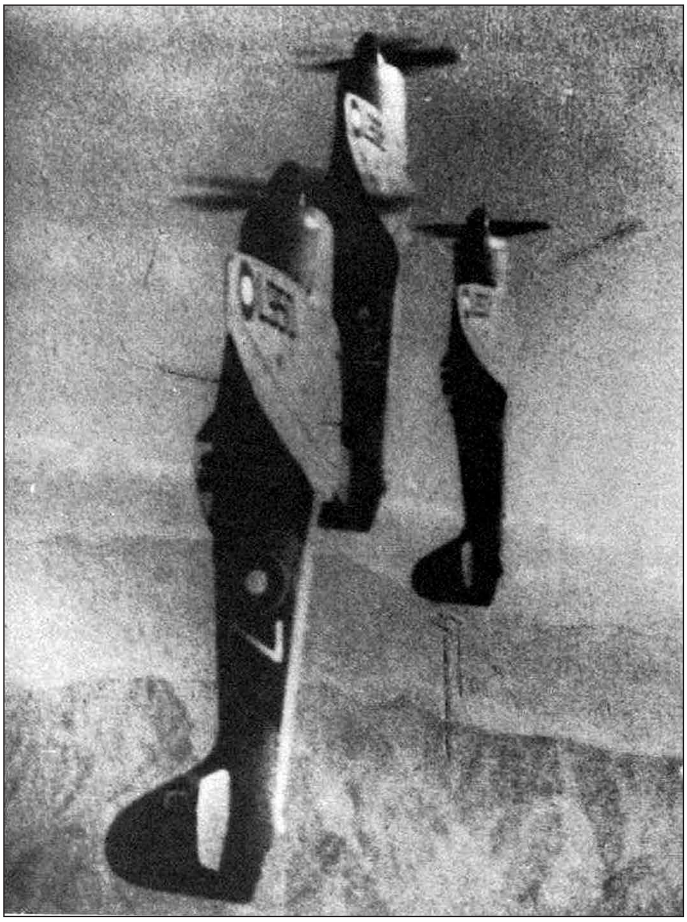
For close air support sorties, the procedures were that Tochi Scouts would lay out 20-feet-long and six-feet-wide white cloth panels with an arrowhead in the form of a "T." This arrowhead would indicate the direction of hostile forces. At the bottom of the T, the Scouts would place two-foot-radius round balls. The colour of the balls would indicate whether air support was to be hot, i.e., live ammunition would be used, or white which meant low passes that would indicate an intent to attack but no use of live ammunition.

On occasions, these detachments would grow in size depending upon the prevailing situation in the tribal areas. In August 1950, shortly after 9 Squadron had converted to Furies a month earlier, the whole squadron was moved to Miranshah for operations. The situation calmed down for quite some time after this air action, and later on, 14 Squadron would deploy at Miranshah in December 1951.

RPAF early on realised the value of holding regular exercises and gunnery practice. The newly formed 14 Squadron also followed the routine of the other two squadrons and participated in a brigade-level exercise code-named 'Chariot' in April 1952 with four aircraft providing close support by engaging enemy strongholds and laying some screens. Then later, in December 1953, the squadron participated in the exercise 'Tulip' from the Sargodha area. Interspersed with these operational activities were flying displays for the general public, visiting dignitaries, and flypasts on national independence day.

RPAF senior officers thought it would be important to show the service's flag in the country and establish a presence; for this reason, air shows and flypasts on national days were regularly organised. The first major air show was organised in Lahore in April 1948, with Wing Commander Asghar Khan, OC Risalpur, in charge. The show included tail chases by Tempest II aircraft simulating a dogfight, a solo air display in a Tempest II by Flying Officer F.S. Hussein, and a dramatized crazy flying display when Flying Officer Atta Rabbani dressed in tribal attire pretended to overpower guards and capture a Tiger Moth and then flying around the airfield in a manner showing the aircraft was barely in his control. Another Tiger Moth had a rifleman in the rear seat to shoot at neatly lined up glass bottles at a pedestal in a display of marksmanship (though the bottles were, in actuality, shattered by an airman hidden below the pedestal). Other flag-showing sorties included a formation of Tempest IIs on a cross-country trip overflying major cities.

The tradition of air shows and aerobatics within operational squadrons translated into the first aerobatics team of RPAF, which was made of No. 9 Squadron pilots. Squadron Leader Zafar Chaudry, who had taken command of the squadron, was a well-reputed aerobatics pilot. He formed the first aerobatics team, the Red Dragons, named after the squadron name and the red painted spinners on the Fury aircraft. Flying Officer Fred Issacs, the slot member of the four-ship aerobatic team, narrates the story:


RPAF formation aerobatics. The first formal RPAF aerobatic team – The Red Dragons of No. 9 Squadron. (Zafar Chaudry via Kamal Butt)

> In April '51, Squadron Leader Zafar Chaudhry replaced A.R. as squadron CO (Commanding Officer). A squash enthusiast, he soon organized a squadron team, and we would fly to Risalpur to challenge the college team. When the squadron was in Miranshah for a spell, Zafar broke the tedium by running track and field events on a squadron 'Sports Day' with participation by the Tochi Scouts as well. Wing Commander Garrard Cole and Air Commodore 'Barney' Keily also attended.
>
> It can be fairly said that the man who pioneered formation aerobatics in the PAF was Zafar Chaudhry. An excellent aerobatic display pilot himself in 1951, he made it happen. Informed that the outgoing C-in-C, Air Vice Marshal Atcherley (RAF), also known as a keen aerobatics pilot in his younger days, would be coming to Peshawar on his final farewell visit Zafar started the ball rolling. Choosing pilots from within the squadron, he assembled, trained, and successfully flew the first four-place formation aerobatics team demonstration, a showing never done before on the sub-continent.
>
> Putting Flying Officer Trevor Gotting, an experienced squadron pilot in the lead, Zafar took the right wing, and Saeedullah took the left in a three-plane formation. They practiced over the next few days to a comfortable degree performing loops, barrel rolls, steep turns, and semi-stall turns. It was time for the slot to be filled to form the basic box. Since both Zafar and Saeed had been my instructors at Risalpur, I was the logical choice, a known quantity.
>
> To ease my apprehensions, Zafar first checked me out in the dual-Fury, flying the slot position behind the other two; I got the hang of it, finding it not as difficult as I thought it would be. The next step was four-plane close-formation aerobatics, the historic

> moment or moments for the Air force as the four Furies took off and climbed out in box formation and then came back over the airfield. We went first into steep turns then barrel rolls, and finally, loops, keeping tight station and being watched by our peers on the ground. The day was the thirteenth, and Trevor joked about that being an unlucky number.
>
> The five-bladed prop disc of my Fury was just a few feet away from the other three airframes, and one had to be handy with the throttle and steady with the stick to match the leads attitude and accelerate or decelerate to maintain position pulling 'G' while ignoring the topsy turvy earth/sky spin outside. My job was helped considerably by the steady station keeping flown by the two experienced wingmen, Zafar and Saeed. Thereafter we practiced almost every day for the rest of the month of April.
>
> I was given a bad fright one practice day. We had completed a barrel roll and rolled out at the bottom quite low. At that point in time, Trev, in lead, thought Zafar had called on the radio for another roll. In fact, it had been Squadron Leader Johnny Rollo (CO No 14 Squadron) in another aircraft watching the show from afar and not appreciating our low altitude. With us hanging on, lead gained as much altitude as he could before banking into the maneuver. Once around over the top inverted and rolling out right side up I got a shock to see my Fury, the lowest in the formation, almost tickling the tops of the trees. Needless to say, our procedures were tightened up especially as to radio calls and minimum altitudes.
>
> The big day came on 2 May 51 when the team gave a low-level formation aerobatics display for the outgoing C-in-C Atcherley and also witnessed by the whole Station Peshawar and Group Headquarters personnel. After the event, Zafar received the C-in-Cs personal congratulations with pride for the squadron. To capture the team performing, sometime later, F.S. Hussain, who was then the Flight Commander of 5 Squadron, flew in another Fury mounted with an oblique camera to take a picture of us inverted at the top of a barrel roll over the historic Khyber Pass.

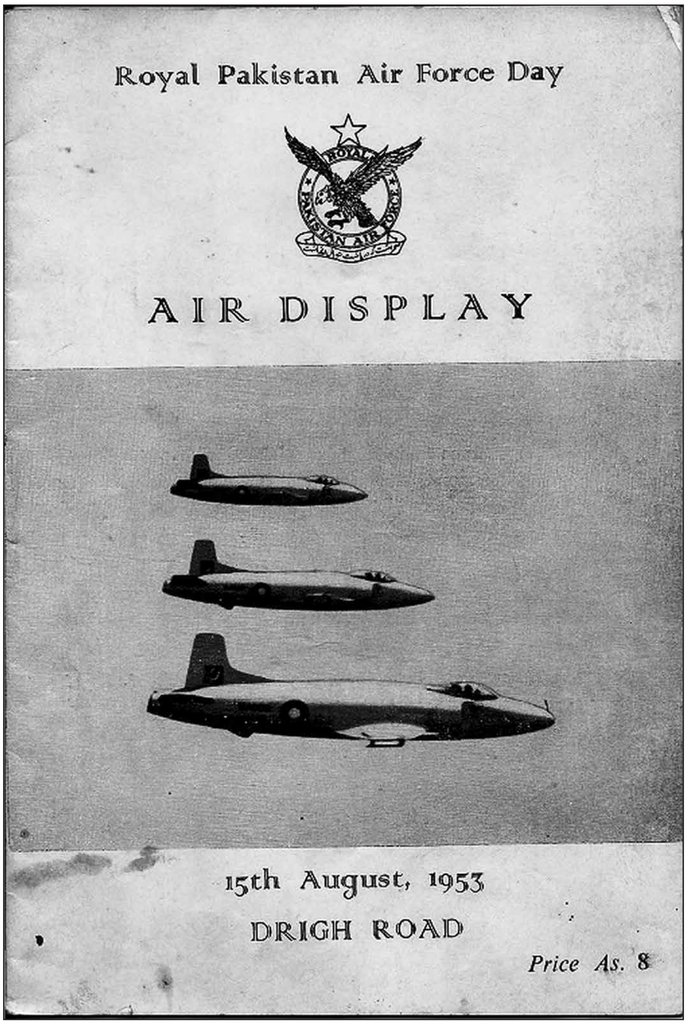
That photo made it into the British *Flight* magazine. The proclamation 'the blue sky beneath me and green earth above' perhaps best describes the yearning that motivated the young flyers to the best professional standards they could aspire for.

As per Air Marshal Zafar Chaudry, the impetus for the idea of creating an aerobatics team was also provided by his squadron member Flying Officer Gotting when he related to him an episode of witnessing an impressive aerobatics display at Risalpur by two Tempests piloted by Zafar Masud and Rahim Khan.

Shortly afterward, 11 Squadron, now equipped with Attackers, would form RPAF's first jet aerobatic team named after the squadron's call sign 'paybills.' The roots of strange call sign being the clear instructions imparted to young pilots of the squadron to pay their mess bills in time.

A flavour of what regular flying and pilot's lives in RPAF meant at the time can be seen in the following description provided by Flying Officer Fred Issacs:

> At that point in time, the entire RPAF fighter air defense rested on the shoulders of number 5, 9, and 14 squadron pilots based at Peshawar. The wing was commanded by Wing Commander Garred Cole, seconded from the RAF.
>
> In January 1950, those of us from 4 General Duties (GD) course who were assigned to fly fighters reported in to Station Peshawar and were spread thinly among the three undermanned squadrons. Pilot Officers Kabir Khan, Fred Isaacs (writer), 'Jan' Janjua, and M. Pir were posted to No 9 (Dragon) Squadron which was commanded by Squadron Leader Bertie Mirza with Flight Lieutenant Abdul Rahim (AR) Khan the Flight Commander. Making up the rest of the complement were Flying Officers Trevor Gotting of 2 GD and Ghani Khan 3 GD, a grand total of eight pilots. From time to time, Risalpur flight instructors would keep their fighter skills current by flying with the squadrons on a temporary basis. Flying Officers M.Z. (Mitty) Masud and Pat Callaghan flew with 9 Squadron from time to time.
>
> Once you have met your CO and fellow pilots, cleared into the Station, and were settled in quarters, the first priority was to buy a bicycle, the mode of transport for most personnel. The daily routine was breakfast, then biking down to the flight line to start the days flying. We jousted on our mounts, jumped over hurdles, and flew bike formations on the way down. At about ten, the tea wallah was around for the break. When summer temperatures made aircraft skins unbearable to touch, all flying operations were started and ended earlier in the day. It was then quiet time indoors until teatime, and the cake man making his rounds again. His cakes tasted so good. He allowed 'tick' without reservation, knowing the pilots were good for it, and knew just when to appear with his book on paydays to collect.
>
> Hashim and Azam Khan were the squash and tennis professionals who looked after the lawn tennis courts and squash courts... These facilities were well used in the cooler evenings. The standard of squash in the Mess was high due to their influence. Most of the Mess staff were also good players. Sometime later, a fund was started to fund Hashim's first participation in the world squash championships staged in London, UK, and all the officers contributed and were rewarded with a win by Hashim.
>
> The fighter-bomber wing's main objective was to be ready for any hostilities, and to this end the squadrons were in constant training in battle formations, practice weapons delivery, and watch and ward duties. The well-used air-to-ground range at Jamrud, a few minutes flight time away, provided facilities for air-to-ground strafing, rocket firing, and dive bombing, enabling young pilots to gain valuable expertise in these exercises. At this time, there was not an air-to-air firing range established; air-to-air attacks using gun cameras was the next best thing.
>
> For watch and ward, the squadrons rotated through the forward airstrip located in Fort Miranshah, which was manned by the Tochi Scouts, who provided a security perimeter. The aircraft hangers were located within the fort gates, as was the messing and living accommodation. Physically lower in elevation than the surrounding area, it was not uncommon during the rainy season to be woken up at night with water levels right up to the beds forcing evacuation.
>
> The aircraft were wheeled out on the tarmac outside for daily flight operations. From here, watch and ward flights were carried out with live operations from time to time in close air support of the Tochi Scouts in their actions against the trouble maker of the time, the Faqir of Ipi.
>
> At Miranshah, there was also a weapon range co-located on the airfield. The locals were avid metal scavengers. After each air-to-ground live firing pass, they would rush out to pick up the empty shell casings then dash back under cover before the aircraft had completed a circuit and was in position for another run.
>
> Pilot Officer Ghani Khan was killed one day performing a split S dive at high altitude, his Tempest running into high-speed compressibility effects that resulted in a loss of control with his



Air Displays were an important outreach effort by the RPAF. (Kamal Butt)

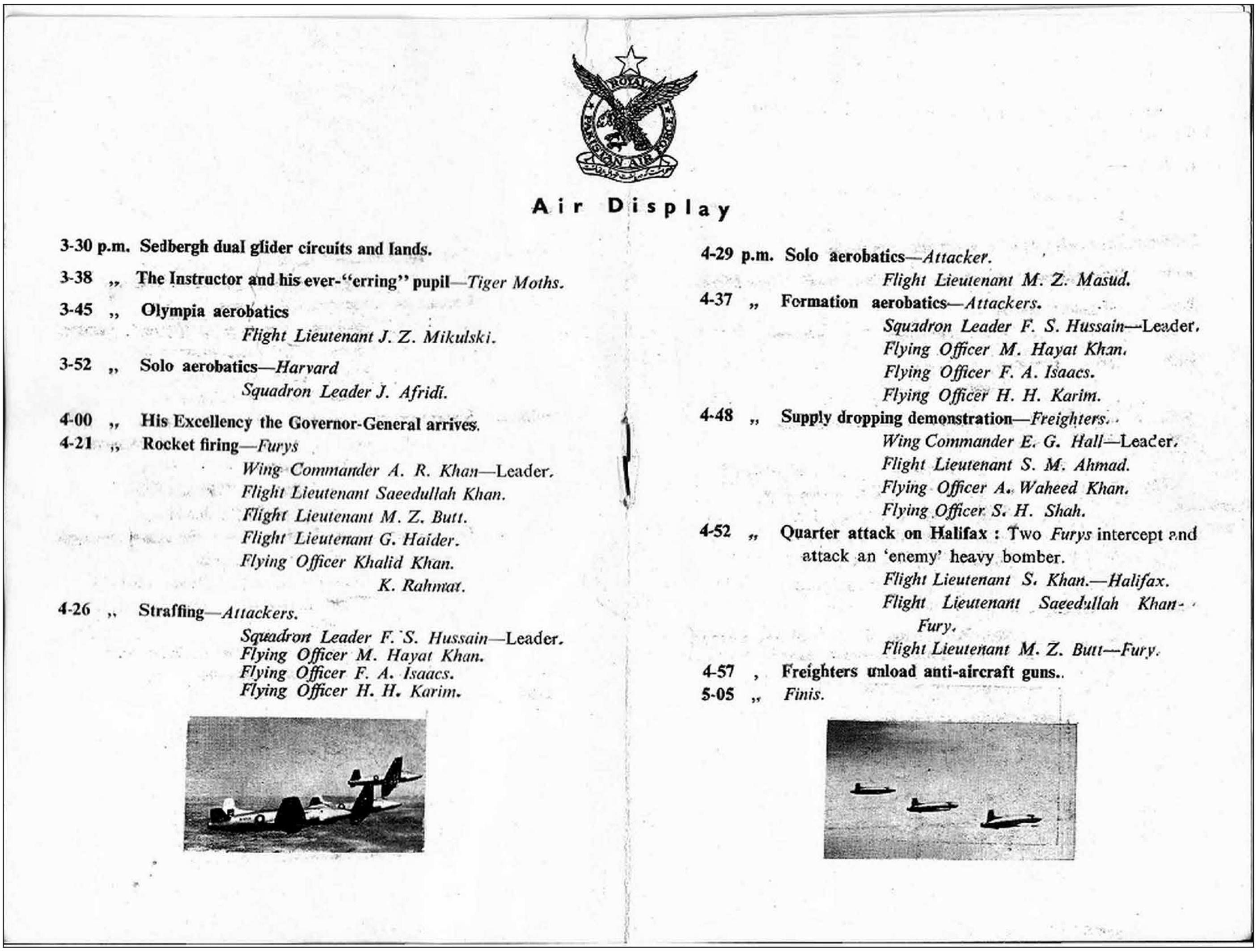
> aircraft breaking up. These effects were first encountered by WW2 Spitfire pilots diving during the air battles over Britain. This drove home to us recent arrivals that apart from the thrills, fighter operations were a very serious business.
>
> In July, the squadrons were equipped with the new Hawker Fury fighter-bomber, a development of the Hawker Tempest. With a more powerful engine, a five-bladed prop, and improved technology, the Furies had far better performance and were even more reliable. Besides receiving multiple scratches from sharp metal edges in the wartime produced Tempest cockpit, we grew to expecting engine failures in these old aircraft. An engine failure caused our first course fatality, which occurred early in his conversion training in Risalpur, another caused Pir to make a forced landing in the Peshawar area, but he was unhurt. Fate caught up with him later, though when flying a Fury, he pulling too tight a turn on the final approach and stalling and killing himself. The Fury had a higher wing loading.
>
> In July, A.R. Khan was promoted to Squadron Leader, becoming squadron CO. Flight Lieutenant Saeedullah Khan was posted in as Flight Commander. Whenever the squadron was in Miranshah, we got to expect game birds for breakfast courtesy of AR, he was an avid hunter, and partridge and pheasant varieties abounded in these parts. A favored flight time of his was the late evening sorties enjoying the spectacular sunsets in the hills and valleys around Miranshah when it was cooler and less bumpy.
>
> As each GD course graduated from Risalpur, the squadrons strength increased. One veteran pilot 'Boss' Ahmad, re-joined the Air force and came to 9 Squadron. Some names remembered were Durrani, Akhtar, Latif, and Zulfiquar. We were looking at some nine or ten pilots. Some were lost in accidents. One went in during the annual air display in Karachi, getting 'target fixation' on an air-to-ground strafing run. Another needlessly killed himself, showing off a slow, low roll over his hometown. We lost Kabir, a passenger in a Bristol Freighter crash into a mountain.
>
> Every year to celebrate Independence Day, the whole wing would fly down to Karachi to participate in an air display then back to Peshawar. Training aircraft from Risalpur were also there, tasked with displaying their formations and flying skills. The fighter-bombers displayed their accuracy in strafing, rocket firing, and bombing targets set up in the in-field area within easy sight of the spectator stands.
>
> Mess life in Peshawar in those days included dinner and dance parties. In addition to seconded RAF personnel, there was a sizable contingent of Polish air and ground crew, both officers and other ranks, who had signed up for service with the RPAF. Alcohol was available in all the messes. A group of us younger pilots formed the 'Ragmop' gang singing the song ragmop at the doors of the more friendly married officers who would invite us in for drinks. The Peshawar Club also held functions which were well attended. On leaving the function, it was a must stop at the tikka kebab vendor's stall parked at the gate. He did a roaring business selling us hot tikkas, which were so tasty, especially after a few drinks during the night.[11]

A reader may view that the number of air displays (including flypasts) indicates a fair amount of effort by the air force for these activities, which would have come at the cost of operational training. Indeed quite a few officers shared this view. However, the countervailing argument was also that at that particular stage of nationhood, it was a worthwhile activity as it kept the air force in the view of the country at large and helped with its other essential activities like recruitment efforts.

In May 1949, the first inter squadron armament competition and the first trophy, named after Air Vice Marshal Perry-Keene, was won by No. 9 Squadron. The views on the utility of armament competitions were mixed, with one idea being that it promoted healthy competition and brought focus to professional concerns. It gave aircrews confidence that they could hit targets with live ammunition and increased familiarity with gunnery techniques. On the other hand, the procedures used for armament competition were not always relevant for operational situations and encouraged activities like air-to-air firing against towed banner targets which were not the best representative of a manoeuvring enemy aircraft. Instead, air-to-air combat practice using cine films allowed more realistic training.

During its initial years, RPAF could hold only occasional Dissimilar Air Combat Training-like exercises (though the term DACT came into use from the 1960s) among the RPAF's jet-piston mix of fighters. The only jet squadron was based 800 miles away, at Drigh Road, from the main fighter force, flying the Furies from Peshawar, where the now three squadron strong Fighter Bomber Wing was based.

However, throughout the first half of the 1950s, the commanding officer of the Fighter Bomber Wing and the Attacker squadron commander enthusiastically sought opportunities for DACT-like exercises between their two types of fighters. This training concept, carried forward from the Second World War training syllabi, was already recognised for developing the most needed skills among fighter aircrews. Also, even when flown between pilots flying



Air Display

3-30 p.m. Sedbergh dual glider circuits and lands.
3-38 „ The Instructor and his ever-"erring" pupil—*Tiger Moths.*
3-45 „ Olympia aerobatics
Flight Lieutenant J. Z. Mikulski.
3-52 „ Solo aerobatics—*Harvard*
Squadron Leader J. Afridi.
4-00 „ His Excellency the Governor-General arrives.
4-21 „ Rocket firing—*Furys*
Wing Commander A. R. Khan—Leader.
Flight Lieutenant Saeedullah Khan.
Flight Lieutenant M. Z. Butt.
Flight Lieutenant G. Haider.
Flying Officer Khalid Khan.
K. Rahmat.
4-26 „ Straffing—*Attackers.*
Squadron Leader F. S. Hussain—Leader.
Flying Officer M. Hayat Khan.
Flying Officer F. A. Isaacs.
Flying Officer H. H. Karim.

4-29 p.m. Solo aerobatics—*Attacker.*
Flight Lieutenant M. Z. Masud.
4-37 „ Formation aerobatics—*Attackers.*
Squadron Leader F. S. Hussain—Leader.
Flying Officer M. Hayat Khan.
Flying Officer F. A. Isaacs.
Flying Officer H. H. Karim.
4-48 „ Supply dropping demonstration—*Freighters.*
Wing Commander E. G. Hall—Leader.
Flight Lieutenant S. M. Ahmad.
Flying Officer A. Waheed Khan.
Flying Officer S. H. Shah.
4-52 „ Quarter attack on Halifax : Two *Furys* intercept and attack an 'enemy' heavy bomber.
Flight Lieutenant S. Khan.—Halifax.
Flight Lieutenant Saeedullah Khan-Fury.
Flight Lieutenant M. Z. Butt—Fury.
4-57 , Freighters unload anti-aircraft guns..
5-05 „ *Finis.*

As the schedule shows, these air displays were elaborate, aimed to impress the public with aerobatics and firepower demonstrations, and sought to keep the service in the public mind. (Kamal Butt)

the same fighter types, such exercises carried significant training value and were a training syllabus feature. The 'dissimilarity' was artificially created by giving one of the rival sides (flying the same fighter) some height and speed advantage (dissimilar energy levels) over the other at the start of each encounter.

Tempest IIs were rarely used for DACT-like exercises due to their dilapidated condition resulting in low operational availability rates. These simulated fighter air combat exercises were given different titles such as "Fighter Sweeps," "Offensive Air Patrols," "Fighter Mixes," and "Rat and Terrier" – the last-mentioned being an RAF-developed low-altitude interception system that involved the use of ground observers that reported incoming enemy planes to a control centre. These Mobile Observer Units were deployed in a circle around each vulnerable area (VA) in two arcs at a radial distance of about 60 and 100 miles from the VA. The system worked well and was retained even after the PAF's first low-level radars arrived.

For guiding and monitoring the progress of these exercises, high-powered radars were used when these were inducted. Earlier, or where radars were unavailable, the rivals met over pre-agreed geographic ground features, each approaching the area at its pre-assigned height and speed. Upon visual contact, a "merge" (freedom to commence the fight) was ordered on the radio in a pre-briefed manner. The merge instantly transformed into the main exercise, a five- to 15-minute session of basic and advanced air combat manoeuvring tactics, usually resulting in one side "shooting down" the other (as visually witnessed by the participating pilots and backed up after landing with film/video evidence). The ongoing air combat manoeuvring (ACM) was immediately halted on the radio call, and the two sides then separated and repositioned for the next round.

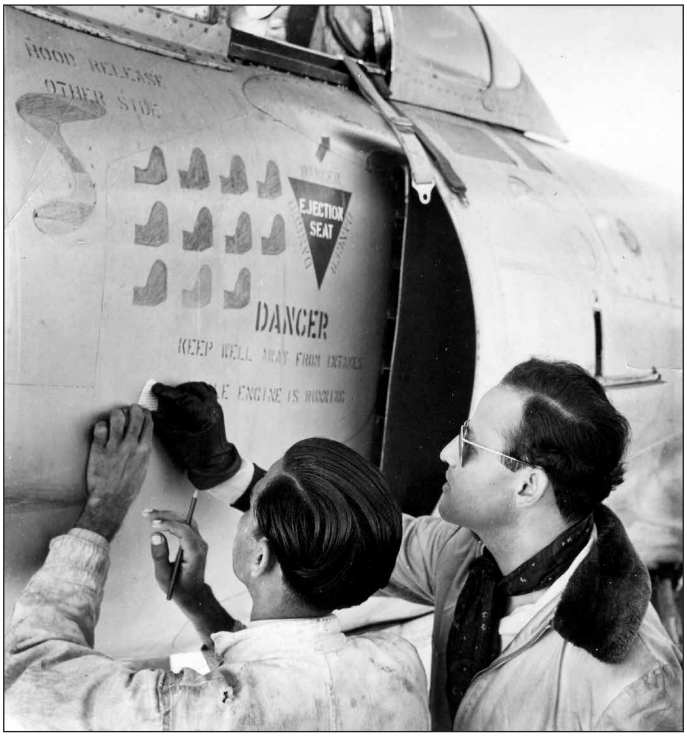
As flight safety considerations started coming into play, safety measures like minimum heights for these exercises were instituted. All fights had to be broken off immediately upon reaching the prescribed altitude "floors." Typically, these were set at 10,000 feet above ground level (AGL) for 'high altitude' exercises and 3–5,000 feet AGL for 'low altitude' ACMs. The senior commanding officers could lower the safety limits to 200 feet AGL during specialised low-level exercises.

A dogfight could also be prematurely and instantly ended by a radio call whenever any senior formation members felt that the safety of the aircraft was being compromised. The immediate halt of any air encounter by radio could be ordered by calls such as: "Fight is Off, Fight is Off," or "Break Off, Break Off," or some other pre-agreed call. Such interventions occurred whenever any of the pair leaders noted that either the "floors" had been reached or a fight was likely to develop into a dangerous situation (for example, two pilots continuing with repetitious 'low-speed scissors') that could lead to the violation of the safety rules. Rapid fuel exhaustion in such exercises was an expected feature. Therefore, only 1–2 repeats could be practiced in a single mission after the prior merge had ended in a conclusion (as announced on the radio by the leader of either side).

These much sought-after opportunities for DACT between the RPAF's north- and south-based squadrons occurred only about

SLING
& CAMERA

No. 11 Squadron Pilots, the RPAF's early jet pilots, from left to right: Trevor Gotting, F.S. Hussain, Fred Issacs. (Kamal Butt)



Fury kill markings – scored during Dissimilar Air Combat Training – are painted on an RPAF Attacker's side. Squadron Leader F.S. Hussain, the squadron commander, is seen looking on. (Zahid Hussain)

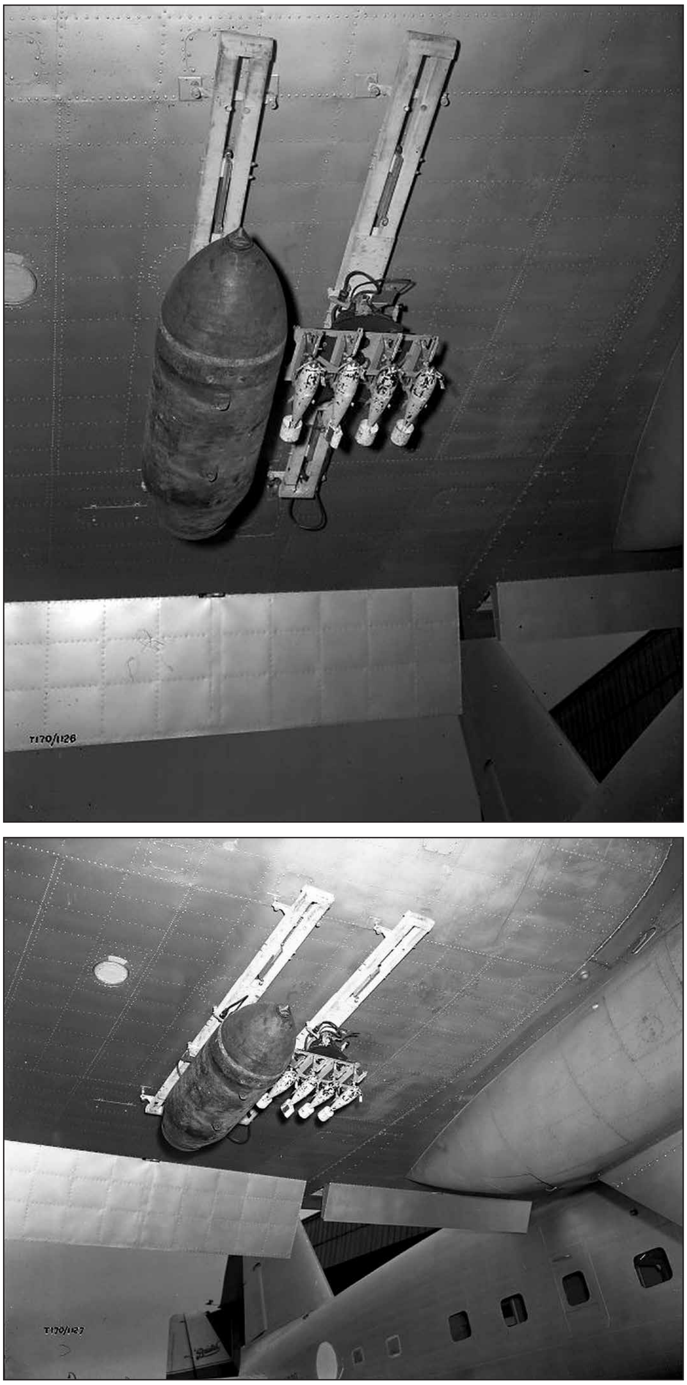
twice a year during Army-Air or RPAF-exclusive exercises ordered by higher headquarters. It was always mandatory for the two formation leaders to hold mutual pre-briefings before each mission. Such briefings were permitted to be done on landline phones when unavoidable. Strict pre-promulgated rules were then verbally reconfirmed, as was the emphasis on the joint responsibility of the two leaders in maintaining strict air discipline. After their telephonic calls, the leaders of the two formations would then brief their pilots on all aspects of the mission, including the safety rules. Besides adhering to the ACM "floor" limits, pilots were prohibited from head-on attacks and other dangerous manoeuvres, such as flying closer to the specified minimum separation distances between planes. All these were refreshed from the relevant parts of the Local Flying Orders or the Command Flying Orders maintained by all flying units.

A typical DACT sortie between a group of pilots flying the Furies and Attackers would include a typical sequence; immediately upon the merge, the two fighters would begin the full range of air combat manoeuvres their planes were capable of. Simultaneously, the rival leaders would carefully record their pilots' attack tactics and gunnery skills, later confirming their notes by the films exposed by the compact movie cameras fitted in the Attacker and Fury cockpits during their detailed analysis after landing. Some manoeuvres that originated in the First or Second World War continued to be used, but newer ones had been added to the list since then. Pilots on either side were free to use the Basic Fighter and Air Combat Manoeuvres (BFMs, ACMs) that they had been taught in their own squadrons. The BFMs and ACMs were not aircraft-specific, but they were performed slightly differently in different aircraft types in a manner that exploited their unique advantage, depending on the contrasting flight characteristics, weapon aiming and delivery devices, and engine power.

Pilots on either side were required to study and remember the flight characteristics of their rival plane. They manoeuvred their aircraft to deny their opponent the characteristic benefits of his particular machine and simultaneously keep the fight at a speed and altitude range that was the best for his fighter to gain and retain an offensive advantage. Pilots were also trained to learn skills that help them continually form a mental picture of their opponent's future positions in the sky while they were inside a dogfight. Once developed, the prediction skill gave them a decisive superiority over a less-trained enemy pilot. But even with that expertise, a minor cockpit error or inattention to the rival plane's behaviour could wastefully lose a hard-earned position from which to shoot him down.

Within two fighting pairs – called a 2 versus 2 – a vital part of the BFM and ACM exercises was the focus on training wingmen how to fly and manoeuvre in such a way behind their leader's aircraft that enabled them constantly to scan the rear sky for enemy planes (called 'clearing the tail') and warn the leaders about all threats.[12]

A major Army and Air Force exercise named November Handicap was held in 1954. It was RPAF's largest exercise to date, which allowed it to test its various capabilities. The exercise was arranged over Northern Pakistan, the areas that was likely to be the theatre of any war with India. RPAF's 11 Squadron with its Attackers participated in two roles, once on the side of 'Enemy' and



Freighters with modifications for carrying bombs under the wings. (BAE Archives)

then 'Friendly.' Both the Red and Blue Forces had Fury squadrons to support their respective ground operations.

During the exercise, the Attackers redeployed, with about a week's interval, to operate from two air bases, Sargodha Forward Air Base and Chaklala Main Operating Base. The Attackers provided top cover to the supported 'Blue Force' Furies attacking ground targets, while the Furies belonging to the 'Red Force' attacked them, creating several DACT situations. During these missions, it was assessed that the balance of air-to-air kills was heavily in favour of Attackers though the Furies were able to claim some kills against the Attackers. In air combat manoeuvring, Attacker pilots could use their plane's better acceleration and higher speed after each attack to regain (and maintain) their altitude advantage. On the other hand, the Fury pilots tried to tempt the Attackers into same-altitude dogfights, in which the Fury would enjoy manoeuvring advantage over the Attacker. The Furies' success against the Attackers was because of instances where Fury pilots could draw an Attacker into an engagement set up, which denied Attackers their speed and altitude advantage.

Bristol Freighters also participated in this exercise in two roles: airlifting parachute troops and air-transported logistics. The Freighters also demonstrated the plane's RPAF modified bombing capability with 8,000lb bomb loads.

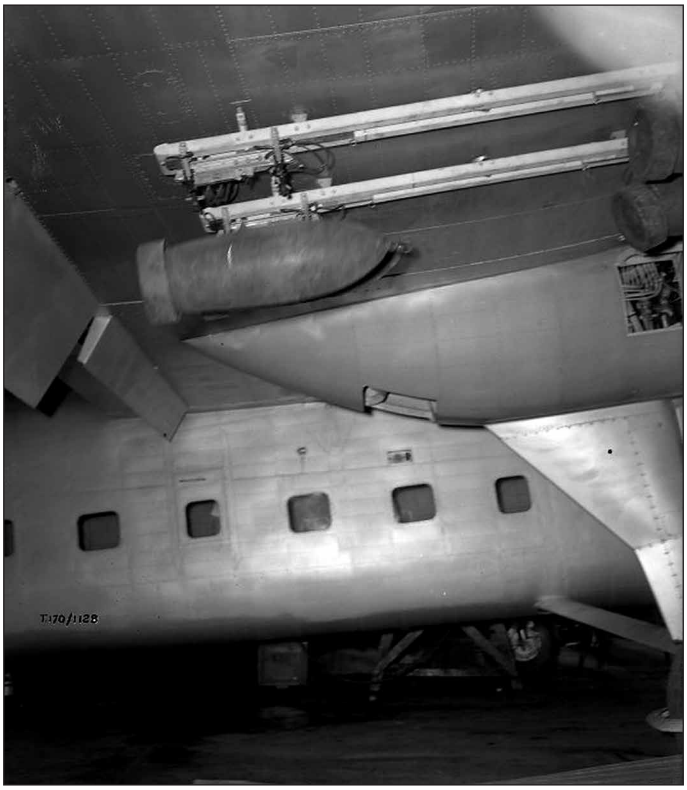
Multi Engines

RPAF's multi-engine fleet consisted of the transport fleet, later followed by an effort to build a heavy bomber force. Dakotas IIIs and IVs inherited from RAF made up this fleet initially and, as mentioned above, were soon pressed into service for supporting Kashmir operations. These supply operations managed to drop 88,000lbs of supplies during these operations.

To say that these supply operations were challenging is an understatement. No. 6 Squadron was the worst off in terms of equipment and trained manpower. With minimal crews both in numbers and experience, the squadron flew in adverse weather amid mountains and valleys. Wing Commander Lanky Ahmad narrates:

> In those days, we took a lot of risks to continue supporting our soldiers by free and para droppings in the remote areas of Northern Kashmir. Once in the winter of 1949, Col. Aslam, the Commandant, made me fly over the Mintaqa Pass, 80 miles west of the famous Khunjarab Pass at the Chinese and Pakistani border. He said that his troops did not have rations for many days due to the heavy snowfall in the area. He sat with me in the second pilot seat to show me the exact spot. We had to fly over 13,000 feet A.M.S.L. (above mean sea level) to reach the site. A wireless message had already been sent to the platoon commander from Gilgit, and he was waiting for us with a firewood signal and white bed sheets spread out on the ground marked as a dropping zone at 11,000 feet.
>
> It was a para dropping from 12,000 feet, the highest we could go without oxygen and super-charged engines required for the tight turns in the narrow valley. The speed of the aircraft came down to near stalling at 100-110 miles per hour at that altitude. The aircraft behaved like a feather flying in thin air. Luckily with two straight-in approaches from the opposite directions, the winter rations were para dropped. When we returned to Gilgit, I told the commandant that it was the first and the last sortie by an old and faithful "workhorse." He made us stay overnight in the mess and sent a long report to the GHQ in the morning about the dangerous and risky mission which we undertook to save our soldiers at the Mintaqah Pass. Incidentally, the four international boundaries meet in that area, Russia, China, Afghanistan, and Pakistan.
>
> We used to fly the most difficult route of the world. With the rising full moonlight, we could see the shining riverbed, lakes, and snow-clad peaks. Later, we also carried out para dropping with Halifaxes. The Indians never came near the aircraft as it had gun turrets. Wing Commander Asghar Khan used to brief us at Risalpur for the sorties and, at times, himself flew in the second pilot seat to encourage and kept our morale high. Till December 1953, I had logged about one thousand hours of flying. The highest number in the PAF in valley in Dakota and Bristol Freighter aircraft, out of which thirty hours was night flying. For these operations, all the aircrew were awarded the Kashmir medal with "mentioned in the despatches" and a brass clover leaf.

> Once in 1951, I flew the Chief Pilot of Bristol Freighter Company in their brand-new aircraft to Gilgit and Skardu. I intentionally flew low over the winding route in the valley. He let me do whatever I wanted to show him off, basically the type of flying we had to do whenever the clouds base was low. He knew that we were in the process of changing over from the vintage Dakotas. They remained in service for over forty years and did a commendable task in the world, especially in the Chindwin Operations over the Burmese jungle in the Second World War. When I flew the Chief Pilot back to Chaklala, he praised the flying and the performance of the new aircraft on the most difficult and dangerous route. He also said that he would not do this kind of operation for any money with a pronounced stammer, with which he was badly afflicted.



A side view of a Freighter with modifications for carrying bombs under the wings. (BAE Archives)

> Our aircraft did thousands of para and free droppings over the Astore, Khel, Shamshal, and Misgar passes. We had a few fatal accidents in the valley, but that was expected as a part of life with that kind of flying. A wise pilot once said that if you don't want an accident, never fly.
>
> …talking about old Dakotas, I had a near-fatal accident in one of them while carrying out a single-engine night landing practice at Mauripur Airfield in early 1951. On my final approach, the live starboard engine suddenly cut, and there was no time to restart it. I was three hundred feet above the ground, and there was no alternative but to belly land straight ahead. I told my second pilot to retract the undercarriage and found the aircraft was luckily swinging to right towards the fair-weather strip because of the low speed and no engine power.
>
> The normal procedure for such emergencies in Dakota is to shift oneself to the second pilot seat and send the crew to the passenger's cabin. The reason for this drill was that the left propeller always entered the Captain's seat after shearing off from its hub upon hitting the ground. It had already cut many heads into half in similar accidents. Apart from the fact that I had completely forgotten for such an eventuality, there was also no time to change the seat. When the aircraft came to a halt, the propeller blade was resting only one inch behind my head after piercing the back of the steel chair. It was the closest call to meet the Almighty. But perhaps He wanted me to live and write these memories for the benefit of future pilots.[13]

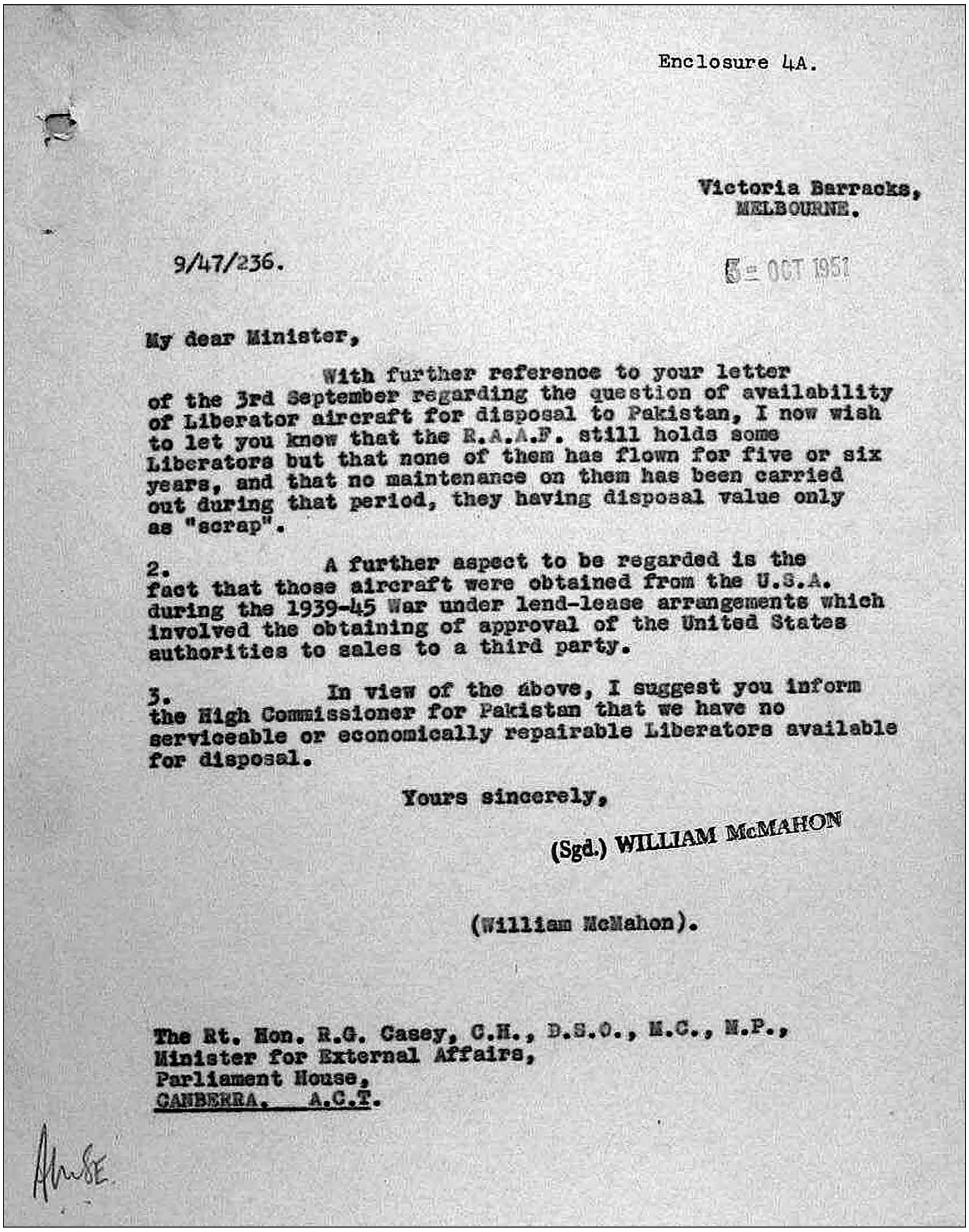
Dakotas were soon slated for replacement by Freighters, but nonetheless continued to provide service for some years in various roles. Transport duties with Dakotas continued until a sufficient number of Freighters as a replacement were delivered. Dakotas continued with communication duties with the Communications Flight, including for Air Commander's transport needs during Air Vice Marshal Atcherley's tenure. The effort to refurbish Dakotas through Pakistan Aviation Limited seemed to have been less than successful, given challenges with building technical manpower capability and equipment. With the advent of Freighters, No. 6 Squadron also started regular passenger and freight duties between Lahore, Chaklala, Peshawar and Karachi, and Lahore and Dacca. In the initial years, some flights were also flown between the UK and Pakistan to support families of officers especially given the

The front view of the bomb aimer's position with a bomb sight that allowed him to use the sight through the glass visible on the aircraft's nose in this picture. (BAE Archives) induction of RAF and Polish officers into RPAF.

After the unsuccessful attempt to operationalise a bomber force with Halifax, another effort was made around 1950 to revive the Halifax fleet. Training of bombing techniques etc. took place; however, maintenance issues with the aircraft and resources required to operate the heavy bomber again precluded these efforts. Based on anecdotal evidence, the heavy bomber operated by 12 Squadron had little real utility in operational terms on account of these issues.

RPAF's significant purchase of Freighters and Wayfarers resulted in these multi-engine aircraft becoming very prominent in the order of battle. With 6 Squadron's permanent base at Lahore, a flight was kept at Chaklala to support supply operations in Northern Pakistan. Two permanent stations for the multi-engine fleet were Mauripur in the South (No. 12 Squadron) and Lahore up country with No. 6 Squadron and Transport Conversion School. The acquisition of many Freighters resulted in dozens of aircraft parked at Lahore with an insufficient number of aircrews available to fly the aircraft.

Freighters were also allocated to the Base Signals Depot unit (later 107 MU), which used the aircraft to calibrate ground radars as required. The unit was also responsible for trials of what was then called radio countermeasures (modern day electronic warfare), including electronic intelligence and radar jamming efforts. This was a local effort and made use of onboard Rebecca equipment. However, these trials proved unsuccessful against Indian S-band radars, which were able to shake off such jamming efforts.[14]



Enclosure 4A.

Victoria Barracks,
MELBOURNE.

9/47/236.

5 OCT 1951

My dear Minister,

With further reference to your letter of the 3rd September regarding the question of availability of Liberator aircraft for disposal to Pakistan, I now wish to let you know that the R.A.A.F. still holds some Liberators but that none of them has flown for five or six years, and that no maintenance on them has been carried out during that period, they having disposal value only as "scrap".

2. A further aspect to be regarded is the fact that those aircraft were obtained from the U.S.A. during the 1939-45 War under lend-lease arrangements which involved the obtaining of approval of the United States authorities to sales to a third party.

3. In view of the above, I suggest you inform the High Commissioner for Pakistan that we have no serviceable or economically repairable Liberators available for disposal.

Yours sincerely,

(Sgd.) WILLIAM McMAHON

(William McMahon).

The Rt. Hon. R.G. Casey, C.H., D.S.O., M.C., M.P.,
Minister for External Affairs,
Parliament House,
CANBERRA. A.C.T.

RPAF made a continuous but not so successful effort to build up a strike fleet. Official communication shows less fruitful results of an attempt to acquire second-hand Liberator bombers. (Authors' collection)

Challenges

While the formation of aerobatic teams, periodic air-to-air combat training, and exercises with other services indicate an effort towards professional development, RPAF also faced significant issues with its operational capacity. These issues stemmed from various factors, and the quotes shared at the beginning of the chapter summarise some of the challenges. These included:

1. Flying culture stemmed from a wartime air force heritage where the need for getting on with the mission, bravado, and abundant resources overtook a systematic approach to operational training, planning, and flying safety.
2. Maintenance infrastructure, which, at least based on anecdotal evidence, needed upgradation.
3. Lack of direction from senior commanders which could have helped develop a structured approach to operational training and operational plans.
4. Significant acquisition decisions severely imbalanced RPAF's force structure.
5. Lack of dedicated planning organisation for the development of war plans, force structure plans, and operational or tactical doctrine, which would then influence operational flying training at the unit level.

RPAF suffered from an alarmingly high accident rate during its initial years, and the culture of this showmanship in the air contributed significantly to this problem. Air Marshal Zafar Chaudry recollected one of his former students at Risalpur, Saleem-el-Idroos, a genuinely outstanding cadet who won all three awards at graduation. After spending some time in a fighter squadron, the young pilot was selected to attend the flying instructor's course at the Central Flying School in England and distinguished himself there. He was then posted back to Risalpur as a flying instructor and, a little later, was killed in a Harvard crash while performing some unauthorised low-level aerobatics.

RPAF's first jet squadron also provides a pertinent example; Air Commodore Sajad Haider narrates the following incident about his Officer Commanding, then considered the king of aerobatics in RPAF, Squadron Leader F.S. Hussain:

> Our first experience of F.S. Hussain's total mastery over the Attacker, for that matter any aircraft, was witnessed just a few days after we had been inducted into the squadron. We were all standing around the crew hanger when suddenly there was a thunderous sound followed by a screaming whistle. At the front end of the noise was an Attacker less than fifty feet off the deck on its back! F.S. Hussain pulled up into an inverted (outside) loop with thick contrails at the wingtips. What a sight it was! It shall never fade in the memory of those who were seeing the inverted loop for the first time. We witnessed much more of this in the 11 Squadron.

While the squadron commander himself was reputed to be a very skilled pilot and went on to make a significant contribution to the force, the quote above substantiates the argument that at the time, showmanship defined what was considered a skilled and professional pilot and operationally relevant yardsticks did not exist.

The serious issues with flight safety shows up in relevant statistics. In November 1948, RPAF had a total of 10 accidents over 1,682.45 hours and 1,591 sorties flown. When converted to the standard flight safety benchmark of assessing accidents over 10,000 hours or sorties, this translates into an accident rate of 59 per 10,000 hours flown and 63 per 10,000 sorties. Fortunately, none of these accidents were fatal, though shortly afterward, in January 1949, a Harvard would be lost in a fatal accident involving a cadet at Risalpur.[15]

Another contributing factor to the high accident rates was also an overall lack of flying experience in RPAF. For example, Squadron Leader Rahim Khan, commissioned in June 1944, became the OC of No. 9 Squadron in February 1949. He was therefore commanding a squadron when he had slightly less than 5 years of service. Similarly, the first squadron commander of No. 14 Squadron, Squadron Leader Khyber Khan, was given command of the squadron at its raising in October 1948 with slightly less than 6 years of service. In their mid-20s and brought up in a wartime air force, the squadron commanders could hardly be blamed for flying indiscipline in their squadrons. They simply lacked the professional experience to put in place an operational training plan that could include the aggressiveness needed for tactical proficiency while in parallel avoiding unnecessary risks.

The above factor is brought home by Air Marshal Zafar Chaudry's narration of an incident with No. 9 Squadron:

> In July or August 1950, a young pilot officer flew into the ground while on a strafing run as part of an air show. Later on, it was discovered that the pilot had fourteen or sixteen hours of flying experience on the Tempests, which was his total flying experience after graduating from Risalpur. At the time, the air force did not appreciate what goes into these things. This was discovered as an afterthought; nowadays, you would not dream of including a pilot of this experience in an air display.[16]

Along with the above factors, which could be attributed to a lack of sufficient institutional maturity, RPAF's training standards had yet to develop the rigor and depth that would come in later years. Initially, the challenge was that pilots graduated from Risalpur, where they flew a 600hp Harvard aircraft and then moved to fighter squadrons, or even at the conversion unit, to fly 2,500hp Tempest IIs. The jump from a trainer aircraft to one of the most powerful piston-engine fighter aircraft was huge. Fortunately, the availability of dual-seat Fury aircraft, which was developed to fill this gap, was able to help. However, this would not resolve more systemic issues like lack of standardisation of training material, methods, and procedures, along with the need for a more rigorous approach and overall methodical system. Flying Officer Fred Issac's experience with conversion to Attacker aircraft is a case in point (see the previous chapter), where the conversion to jet aircraft essentially consisted of handing over of pilot's notes of the aircraft to the pilot (a total of an approximately 70-page document, which compared very poorly with what was to become generally available in later years with American aircraft like F-86s and F-104s), being asked if there are any questions and then tasked to fly the aircraft. More nuanced insights into the issues RPAF faced in this regard can be obtained by the following incident narrated by Air Vice Marshal M. Sadruddin:

> I was then a Flying Officer in No 5 Squadron and had just qualified as a section leader, which meant I could lead a small formation.
>
> It came about that I was detailed to lead a ferry of three Furies to PAF Drigh Road and fly back to Peshawar with new ones that had just arrived from the UK. These were, however, for No 14 squadron as replacements, so I was obliged to take two new pilot officers from them. Apparently, they were short of flight leaders hence my loan for the purpose. On the day in question, I briefed my two wingmen with whom I had not flown before and asked if they had flown formation in cloud, the answer to which was yes. I should have been sceptical because their combined experience on the Fury was around 35 hours: but being of a trusting nature, I took them at their word and explained the procedure for a vic join-up should we encounter clouds as well as manoeuvres should visual contact be lost. The en-route weather forecast was for cloud halfway, though Kohat Hills were clear and since I had a current white instrument rating (basic) earned during my flying at RAF College Cranwell UK, gave me the confidence to press on. Incidentally, I was perhaps the only one at PAF Peshawar with such a rating – one reason why I may have been detailed by the formidable OC Fighter Bomber Wing – Wing Commander A Rahim Khan, later to be Air Chief.
>
> In those times, navigation aids were few and far between and consisted of only RDF (radio direction-finder) and the radio compass; Fury lacked the latter – so except at the two ends of the ferry, it was to be map and compass dead-reckoning navigation. The attitude gyro (then known as the artificial horizon) was also limited in that beyond the vertical and 90 degrees vertical and 90 degrees lateral, it would topple and then take some minutes to re-erect – meantime, you relied on limited instrument panel. These handicaps, however, were compensated by the 5 hours the Fury could fly with external tanks. Getting to Karachi took 2.5 hours, so there was plenty of endurance to recover from getting lost. The

> usual cruising altitude was 7,000 ft at a CAS of 240kts, that would give a true of around 280kts.
>
> After take-off, we settled at the planned level and course, soon transiting the Kohat Hills, after which dark clouds loomed ahead, touching the hilltops. As briefed, a tight vic formation was called. It was not possible to fly under them due to high terrain, and we were soon into them. Instead of generally smooth clouds of England, they were rough and highly turbulent. My wingmen starting with "Tinchu" Zaheer on the left wing, started to waver and, one after another, drew away and disappeared in spite of my exhortations to stay cool. Once again, I reminded them to get onto instruments, turn away 15 degrees for 30 seconds and then resume course. From Tinchu there was no response; Rafiqui acknowledged with compliance and a stable voice. I feared the worst for the other because we were in cloud above the hills between Kohat and Bannu, and he was not replying to advice to rely on his instruments.
>
> Suddenly I was out in the clear; the first good news was Rafiqui on my right about a mile away and calling contact. The Khurram river soon appeared ahead; by now, I had decided there was no future in D/R, and river reference with the Indus was the best alternative. My quandary about Tinchu was quickly resolved by a call from him stating he was over a river, circling and lost. Now the Indus is a long river, and finding him would take forever. The chances of spotting him being rather low, I told him to head north up river, turn west at the Kabul river junction, and then onto Peshawar. In view of his cloud performance, this was the best possible advice. Meantime realizing there was no future in conventional navigation through cloud, a descent to the Indus and generally following its course up to Sukker seemed sensible. As I closed in down to the confluence of the Khurram and Indus, there was sight for sore eyes in a Fury circling the junction. Very soon, I joined up on him, and as he fell into position I noticed his gear doors were down; repeated re-cycling of the gear had no effect; sending him back would have been hazardous in view of his inept handling in weather and in any case he was not willing to return alone. The pilot's note's specified a max speed of 220kts. with doors extended; there being no effect on range at this lower speed we continued along the river and below cloud.
>
> After Sukkur the overcast cleared so we climbed up and resumed D/R, arriving uneventfully at Drigh Road. Debrief revealed Tinchu had spiralled out of cloud narrowly missing the ground; had he broken off just a minute earlier he would have collided with high ground. As explained earlier his artificial horizon had toppled. It was not 'written' for him that day.
>
> The next day the three new Furies were air tested by me without anything out of order. I let my wingmen each fly a sortie afterwards and planned a return to base for the following day. Prior to testing the first of the new Fury I had noticed a bulged fairing under the rear fuselage, discovering a radio compass antenna. All the new ones had them. Had I not been curious nobody else was to tell me – such were the times! I was to determine for myself how it worked having read something about it in the past. It was soon to prove a boon for the return flight. The weather forecasts in those days were usually ambiguous, we were given the usual mix of the elements; the sky being clear over Karachi found us setting course at the usual altitude. Until Sukkur fine conditions prevailed but soon after an ominous wall of purple menacing cloud stretched ahead from horizon to horizon. I should have turned back but the press on regardless spirit was much in vogue then. Having learned my lesson, I led the flight to low level, chose the Indus and found the radio compass giving a steady reading for the Mianwali beacon. There were times when visibility was down to a quarter mile in heavy rain; my wingmen stayed close; once abeam Mianwali a decision to divert would have been needed as then this airfield was disused. Luckily the cloud lifted at this point and we were able to make it to Peshawar below the overcast landing there in light rain. The radio compass had given me the confidence in that a diversion to Lahore would have been easy at low level – Sargodha being disused. The new Furies painted in a green camouflage scheme were a pleasing change from the desert brown of the rest. In time more, new ones arrived allowing me again the pleasure of using new equipment. Nobody took interest in the radio compass with the device gradually becoming an unserviceable appendage. Those days flying was much simpler but more hazardous.

The episode above highlights the key issues that RPAF faced. Lack of experience in its flying cadres could perhaps not be more evident; in the entire Fighter Bomber Wing there was just a single pilot with a white instrument rating (the instrument rating standards were introduced by RAF in 1950 and included three ratings in ascending order of white, green and master green). That a piece of new equipment was included in the latest batch of Fury aircraft which a pilot discovers coincidently shows that there was little prior planning for induction of the variant, additionally, scheduling of a ferry mission with two young pilots with barely 35 hours of on type flying where they could encounter adverse weather conditions highlights how casually mission planning and scheduling was done.

In the early years RPAF, also suffered from non-standardisation of flying and ground operations in different squadrons and locations. Local commanders and supervisors frequently altered or 'improved' their work processes, depending upon their individual knowledge base and varied professional experience. Squadron procedures and briefings were thus not uniformly informed and sometimes in dangerous contradiction with another squadron. The RAF-style documentation for both flying and aircraft maintenance was noticeably skimpy when compared with the technical publications that came later with every American machine or process, nor was there any system or process to reconcile or modify various publications, over time resulting in units or personnel having their own understanding of what needed to be done and how. These issues extended to things as fundamental as landing procedures, Furies and Tempests used shorter and steeper circuits for landings but without any real set procedure. Formations of fighters often used to come at the airfield in a screaming dive to deck level. Reaching the deck level, they would pull sharply in a vicious upward turn and fan out (while excess speed was conveniently and spectacularly lost). The aircraft would then lower gear and flaps while doing a tight turn round towards the beginning of the runway with bank reducing till the wings were levelled precisely at touch down. A formation approaching for landing thus usually presented quite an impressive display. At times this could result in unseemly pile ups. One or more of these "hot rodders" would chop off the other's tail or some would land on top of another. Later US Air Force (USAF) procedures were introduced which were neat and formalised without any unnecessary waste of time or any showmanship.

The lack of standardisation and method to operational flying effected RPAF in other ways, though not apparent at the time, were realised by the veterans only once they were introduced to USAF methods with the advent of US assistance under the Mutual Assistance Programme.

Air Commodore M.Z. Masud recalls:

> I was surprised when we saw US training materials discussing manoeuvres like the yo-yo, my first reaction was why something like this was needed, I had never stopped to think that while I may know how to do a yo-yo, a junior pilot may not. We left new pilots on their own and assumed that they would somehow learn everything that is needed.

Force Structure and Planning

Before the advent of US assistance program, RPAF's order of battle remained rather unimpressive with its teeth including the three Fury squadrons and sole squadron of Attackers. The force was operating out of Peshawar, Risalpur, Kohat, Sargodha, Lahore, Drigh Road and Mauripur. No combat units were yet stationed in East Pakistan where Tezgon near Dacca was the terminal for transport flights.

The force structure was severely disbalanced with several dozen Freighters, in total numbers probably matching the number of combat aircraft operational at the time. Acquired at a cost per unit of probably twice as much as an Attacker and several times more compared to a Fury, one can only imagine the negative effect on RPAF's budgetary resources. In addition, the manpower-constrained RPAF had to contend with the aircraft requiring a three-person flying crew for the type and being a larger twin-engine aircraft which would have further burdened its limited maintenance resources. The acquisition of this number of transport aircraft was way beyond the numbers specified in any of the force target plans and could neither be justified as a possible attrition replacement for the type. Additional sums spent on modifying the Freighters for a bomber role was another waste of considerable sum for a resource starved force. A slow transport aircraft further weighed down by thousands of pounds of external bombs would have offered little more than easy target practice to an adversary's defences. The sums spent on acquiring the large number of Bristol Freighters and equally ill-thought modifications could have instead allowed a significantly larger fighter force and a far better development of the needed support infrastructure. In the same light, acquisition of Attackers was also not the best decision possible, this meant that a fledging air force was inducting a jet aircraft which was not in large scale use by its own country and was therefore a relatively unknown quantity in terms of maintenance and support. Though the aircraft ushered the jet age for RPAF, anecdotal accounts of the air crew and maintenance personnel, as noted in an earlier chapter, indicate that the aircraft was a challenge in respect of flying and supporting it for operational duties.

The issues of inadequate size of its fighter aircraft fleet, an imbalanced composition of its order of battle and ill-structured operational training was compounded by lack of dedicated planning team in RPAF which came up only as late as 1961. Until that time war planning, force development planning and emergency planning were done within the operations branch or in No. 1 Group as one of their several other activities. RPAF's planning needs were thus only met on an ad hoc basis. In the absence of any institutionalised and systematic planning effort questions like how large should RPAF be, what should be the mix of different types of aircraft, how a possible war could unfold and how best could RPAF employ its resources within a larger war were never comprehensively addressed. At the time, the war plans that did exist were sketchy and completely defensive in nature. These plans aimed at conserving the force as much as possible and any offensive action that was to be contemplated was to be determined by the circumstances arising at the time. What those circumstances could be and what could be the shape of such an offensive action was not defined in detail.

With these significant challenges RPAF as an air force was not very well positioned against its likely adversary. The Indian Air Force may or may not have faced its own set of issues but as a force it was significantly larger than RPAF with a far more capable a supporting infrastructure. For sure, RPAF had come a long way from where things stood just almost 10 years ago, but it still had significant challenges before it.

5

CONCLUSIONS

At birth, RPAF was deficient in equipment, support infrastructure, personnel, and especially personnel with experience of command at the senior level. Several steps were taken to address this in the short and long term. These steps included reliance on RAF officers, efforts to induct Polish officers, planning and acquisition of different aircraft, and most importantly, considerable efforts were made to set up training infrastructure in the country and utilise training opportunities other countries provided.

After independence, the country's security considerations shifted quickly to the eastern border, and the ask from RPAF increased considerably. RPAF's heritage from the RAF and RIAF played a crucial role in addressing those challenges.

First, the RAF-seconded senior commanders made a sound decision in emphasising the training of sufficiently qualified manpower. Setting up the Flying College at Risalpur, technical training for officers and men in the UK, collaboration with the RAF and ATS for training purposes, and general public outreach programs were steps that went far in providing a solid foundation for RPAF's development.

This heritage also worked in several other vital ways; that the air force would be an independent service and not part of another service with a distinct mission of its own meant that RPAF never had to fight for its existence. From the very start, the service could concentrate on building up its capacity with the ultimate goal of being a modern air force. RPAF also inherited the RAF's code of conduct, traditions, and the Battle of Britain spirit of getting on with things no matter the odds. This provided an ethos that proved very valuable for RPAF not only in its initial years but through the rest of its history.

At the same time, the relationship with the RAF and UK also created challenges for RPAF. First and foremost, the strategic goals of RPAF as a military arm of an independent nation and its former colonial rulers were not entirely aligned. The British Empire had viewed its colonies as providing economic returns, serving British commercial interests,[1] and in cases being of strategic value, for example, north-western India (later Pakistan) being the bulwark against possible Soviet expansionism. These views carried over to the period when the colonies had become independent countries. We discussed how some acquisitions by RPAF can best be understood from the perspective of British commercial interests rather than Pakistan's operational requirements. The desire to keep the former colonies within British influence was tied to these interests. Correspondence from the British Embassy in Washington to the Commonwealth Relations Office dated 2 February 1955, describes former RPAF air chief Air Vice Marshal Atcherley's meeting with Pakistan Army's Major General Shahid Hamid as follows:

> Atcherley told me he was unhappily surprised at what he thought was Shahid Hamid's general attitude towards our desire that Pakistan should be equipped as far as possible with British military equipment and retain its British organization… when the General turned towards the subject of the Royal Pakistan Air Force's requirements, he was obviously not as confident as he had been in the case of the army and genuinely sought Atcherley's opinion on their proposed plan to reequip their fighter wings with F-84s and F-86s. Atcherley stressed the danger of attempting to build up their air force too quickly or with equipment too complicated for their tender technical backing at its present stage of development.[2]

This summary of the meeting illustrates how a former RPAF commander was strongly inclined to keep the air force tied to British interests in terms of equipment and influence and had relatively little consideration towards Pakistan's interests.

Years later, senior RAF officers would realise this issue. When queried on the subject of what his thoughts were on RPAF moving towards American equipment, Air Marshal McDonald (the last RAF-seconded Commander-in-Chief of RPAF) said:

> My feeling is that the British government and RAF were selling things, and Americans were giving grants. It was simply a question of economics. I made a case for Photo Reconnaissance cameras that was developed during the war, all I wanted was for the Air Ministry to provide half a dozen of them to RPAF, but I was never successful. Americans were offering this equipment which was very good, then why not.[3]

One can imagine that had the goals of RAF-seconded leadership and RPAF been wholly aligned, the service could have progressed much further than it did in its first decade.

This misalignment of strategic objectives manifested itself in a significant way. Despite considerable strides made by RPAF, the service could not address the weaknesses in its operational flying, planning, and flight safety.

A Fury beating up Miranshah; showmanship in the air would cost RPAF dearly. (Kamal Butt)

RPAF's operational training suffered from a lack of direction, planned methods, and procedures. To a large degree, it can be explained by RPAF's reliance on British equipment and organisational practices of the time. These were woefully inadequate compared to its later experience with US equipment and support methods. We can illustrate this with a comparison of supporting material available for British and US-supplied equipment.

For example, the Pilot's Notes for the Supermarine Attacker were less than 70 pages long and would provide the pilot with a brief description of the aircraft and included basic instructions related to various operational aspects of the aircraft. In contrast, the Dash One for the US-supplied equipment like the F-86 Sabre was considerably more comprehensive, designed to be easily comprehensible, and structured to provide far more information to the user in an accessible manner. They would also offer significantly more information on the aircraft's performance and form an excellent foundation for a pilot to plan his mission and understand the system he was operating. During this 'British' era, a pilot or his equal in a supporting function simply did not have these supporting tools, which would prepare him methodically for the task at hand.

The effect of the lack of direction by senior commanders on this issue, along with the inadequacy of available tools, is well illustrated by this anecdote about the well know PAF pilot M.M. Alam:

> One afternoon at about 1:45 pm, a group of young officers was heading on foot to the PAF Officers Mess when we heard loud sounds from a Tempest returning. The Tech SNCO raised his hands and told the pilot to "Halt Dead and Switch Off" on the taxiway. We all saw the diminutive Alam coming out and seeing the result of his super low beat up and skim over reeds on Soniami beach. The underbelly was torn and shredded to pieces. How he survived is only known to Allah. The veritable OC decided to punish Alam by giving him two months of gardening duties but did not chuck him out, saying, "let the little f---r continue to kill himself!"[4]

A row of Supermarine Attackers lined up before delivery. (Kamal Butt)

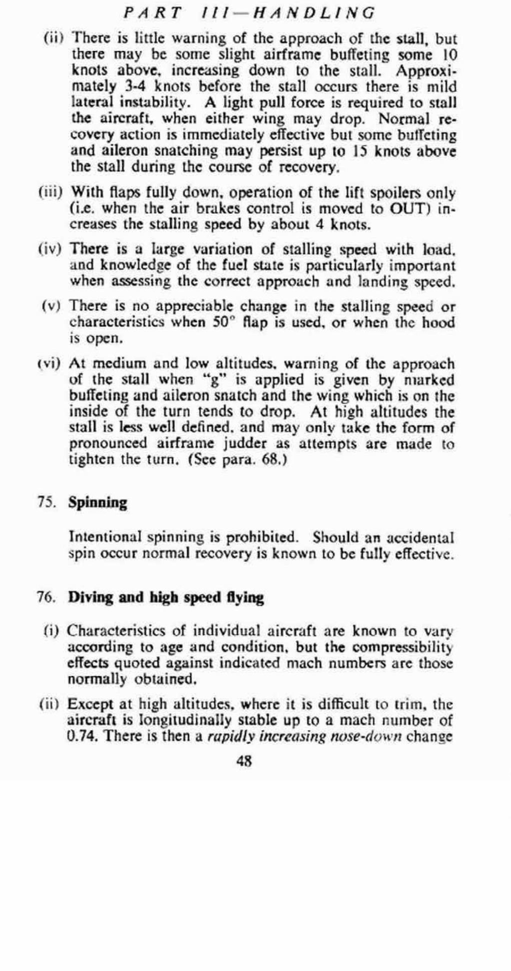
The OC of the fighter conversion unit at the time was Air Vice Marshal Khyber Khan, who builds on this story by recounting another encounter with Alam a few years later:

> I was visiting Mauripur for some air staff meeting; as I left for the meeting, I saw Alam working in his room with a few books open. I went over to him and asked him what he was up to; he turned around and said, "sir, I am trying to work out where my gun sight piper should be if I am pulling so many Gs and have this bank angle." We got talking, and I forgot about the meeting and spent the next few hours working with Alam on these problems … the point I am illustrating is how the professional ethos had changed over these years.[5]

The above incident illustrates the change that took place in later years and how the earlier absence of direction and tools affected RPAF's operational potential. Most definitely, this lack of focus was felt not only for fighter squadrons but through other service activities, including critical support functions.

RPAF's effectiveness was further compromised by its organisational structure, which exacerbated this lack of purpose. RPAF was organised such that Air Headquarters performed the role of policy making, and administrative and operational control of operational units was with No. 1 Group. This, perhaps contrary to intention, resulted in No. 1 Group acting as a day-to-day administrative unit or a "junior Air Headquarters." This structure was not conducive to instituting change; senior commanders who could have the intent or the capacity to bring about change were far removed from operational units. Additionally, the core competencies necessary for an effective air force were not consolidated functionally. This, in turn, would not allow the build-up of institutional experience. This organisational setup may have worked for an air force like the RAF, which had many experienced officers. For RPAF, consolidating its limited experience base was necessary so that the service could work with greater clarity of purpose. The lack of a dedicated planning organisation was also felt. Without this capacity, force structure and war planning could only be done on an ad hoc basis. These issues with the overall organisational structure of the service would make it very difficult to bring together the different components of the air force as one whole and affect its overall capability.

How these significant challenges were addressed will be the subject of Volume 2.



PART III—HANDLING

(ii) There is little warning of the approach of the stall, but there may be some slight airframe buffeting some 10 knots above, increasing down to the stall. Approximately 3-4 knots before the stall occurs there is mild lateral instability. A light pull force is required to stall the aircraft, when either wing may drop. Normal recovery action is immediately effective but some buffeting and aileron snatching may persist up to 15 knots above the stall during the course of recovery.

(iii) With flaps fully down, operation of the lift spoilers only (i.e. when the air brakes control is moved to OUT) increases the stalling speed by about 4 knots.

(iv) There is a large variation of stalling speed with load, and knowledge of the fuel state is particularly important when assessing the correct approach and landing speed.

(v) There is no appreciable change in the stalling speed or characteristics when 50° flap is used, or when the hood is open.

(vi) At medium and low altitudes, warning of the approach of the stall when "g" is applied is given by marked buffeting and aileron snatch and the wing which is on the inside of the turn tends to drop. At high altitudes the stall is less well defined, and may only take the form of pronounced airframe judder as attempts are made to tighten the turn. (See para. 68.)

75. **Spinning**

Intentional spinning is prohibited. Should an accidental spin occur normal recovery is known to be fully effective.

76. **Diving and high speed flying**

(i) Characteristics of individual aircraft are known to vary according to age and condition, but the compressibility effects quoted against indicated mach numbers are those normally obtained.

(ii) Except at high altitudes, where it is difficult to trim, the aircraft is longitudinally stable up to a mach number of 0.74. There is then a *rapidly increasing nose-down* change

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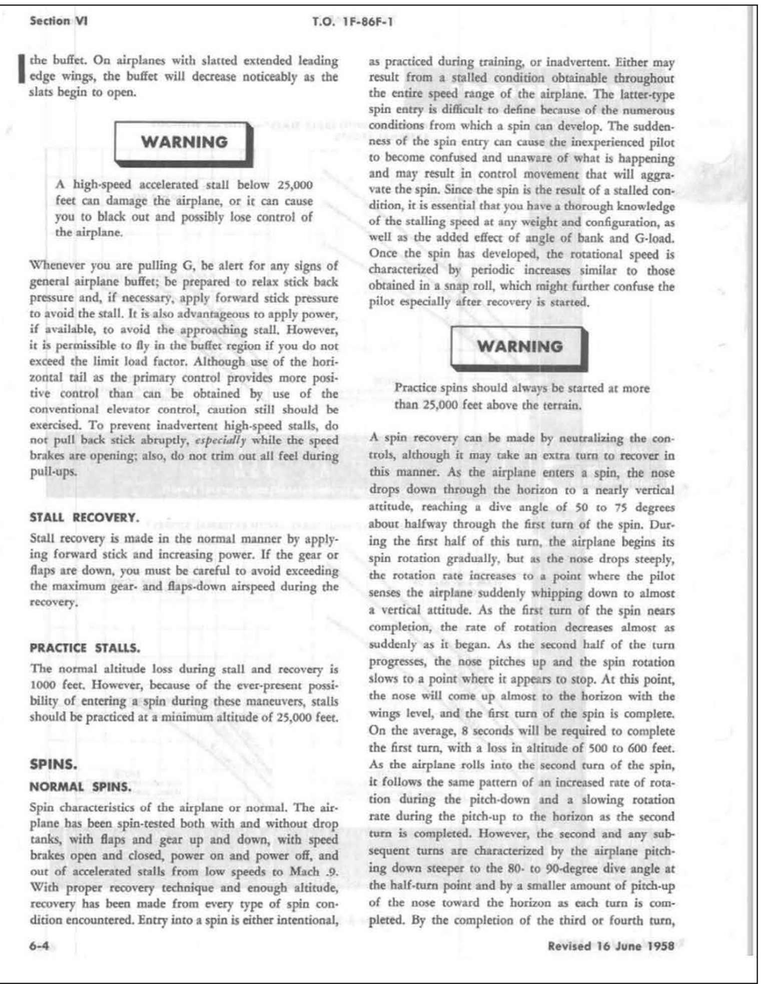

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the buffet. On airplanes with slatted extended leading edge wings, the buffet will decrease noticeably as the slats begin to open.

WARNING

A high-speed accelerated stall below 25,000 feet can damage the airplane, or it can cause you to black out and possibly lose control of the airplane.

Whenever you are pulling G, be alert for any signs of general airplane buffet; be prepared to relax stick back pressure and, if necessary, apply forward stick pressure to avoid the stall. It is also advantageous to apply power, if available, to avoid the approaching stall. However, it is permissible to fly in the buffet region if you do not exceed the limit load factor. Although use of the horizontal tail as the primary control provides more positive control than can be obtained by use of the conventional elevator control, caution still should be exercised. To prevent inadvertent high-speed stalls, do not pull back stick abruptly, *especially* while the speed brakes are opening; also, do not trim out all feel during pull-ups.

STALL RECOVERY.

Stall recovery is made in the normal manner by applying forward stick and increasing power. If the gear or flaps are down, you must be careful to avoid exceeding the maximum gear- and flaps-down airspeed during the recovery.

PRACTICE STALLS.

The normal altitude loss during stall and recovery is 1000 feet. However, because of the ever-present possibility of entering a spin during these maneuvers, stalls should be practiced at a minimum altitude of 25,000 feet.

SPINS.

NORMAL SPINS.

Spin characteristics of the airplane or normal. The airplane has been spin-tested both with and without drop tanks, with flaps and gear up and down, with speed brakes open and closed, power on and power off, and out of accelerated stalls from low speeds to Mach .9. With proper recovery technique and enough altitude, recovery has been made from every type of spin condition encountered. Entry into a spin is either intentional, as practiced during training, or inadvertent. Either may result from a stalled condition obtainable throughout the entire speed range of the airplane. The latter-type spin entry is difficult to define because of the numerous conditions from which a spin can develop. The suddenness of the spin entry can cause the inexperienced pilot to become confused and unaware of what is happening and may result in control movement that will aggravate the spin. Since the spin is the result of a stalled condition, it is essential that you have a thorough knowledge of the stalling speed at any weight and configuration, as well as the added effect of angle of bank and G-load. Once the spin has developed, the rotational speed is characterized by periodic increases similar to those obtained in a snap roll, which might further confuse the pilot especially after recovery is started.

WARNING

Practice spins should always be started at more than 25,000 feet above the terrain.

A spin recovery can be made by neutralizing the controls, although it may take an extra turn to recover in this manner. As the airplane enters a spin, the nose drops down through the horizon to a nearly vertical attitude, reaching a dive angle of 50 to 75 degrees about halfway through the first turn of the spin. During the first half of this turn, the airplane begins its spin rotation gradually, but as the nose drops steeply, the rotation rate increases to a point where the pilot senses the airplane suddenly whipping down to almost a vertical attitude. As the first turn of the spin nears completion, the rate of rotation decreases almost as suddenly as it began. As the second half of the turn progresses, the nose pitches up and the spin rotation slows to a point where it appears to stop. At this point, the nose will come up almost to the horizon with the wings level, and the first turn of the spin is complete. On the average, 8 seconds will be required to complete the first turn, with a loss in altitude of 500 to 600 feet. As the airplane rolls into the second turn of the spin, it follows the same pattern of an increased rate of rotation during the pitch-down and a slowing rotation rate during the pitch-up to the horizon as the second turn is completed. However, the second and any subsequent turns are characterized by the airplane pitching down steeper to the 80- to 90-degree dive angle at the half-turn point and by a smaller amount of pitch-up of the nose toward the horizon as each turn is completed. By the completion of the third or fourth turn,

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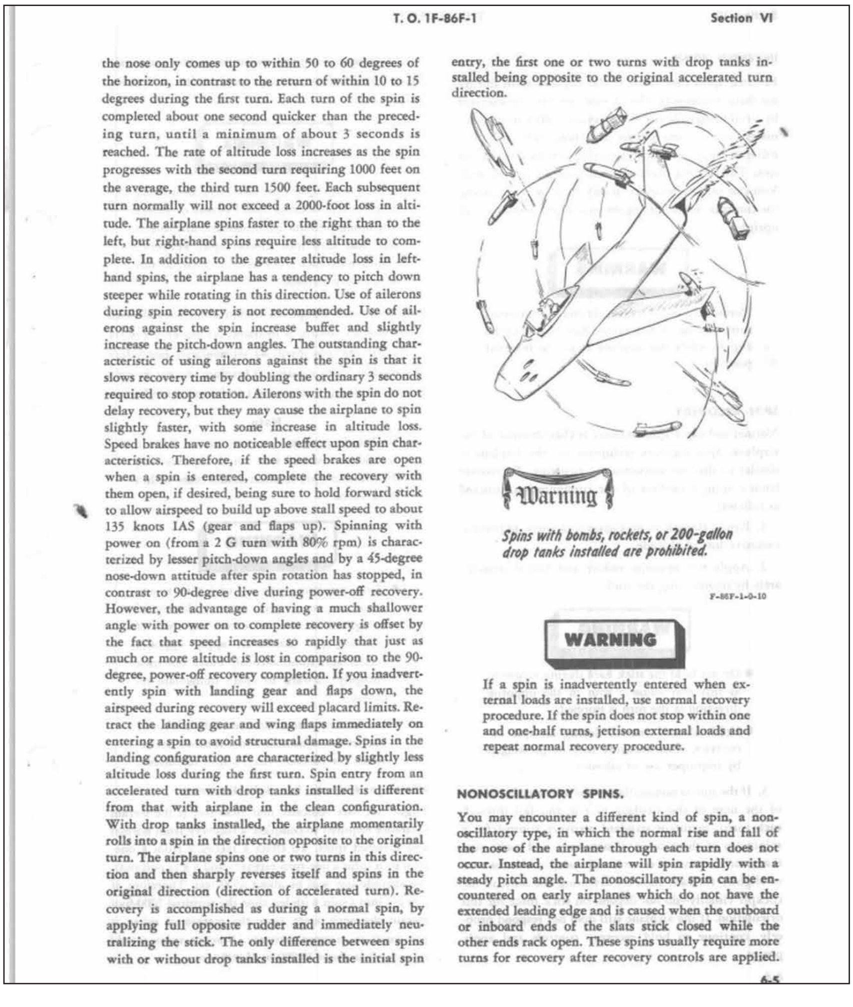

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the nose only comes up to within 50 to 60 degrees of the horizon, in contrast to the return of within 10 to 15 degrees during the first turn. Each turn of the spin is completed about one second quicker than the preceding turn, until a minimum of about 3 seconds is reached. The rate of altitude loss increases as the spin progresses with the second turn requiring 1000 feet on the average, the third turn 1500 feet. Each subsequent turn normally will not exceed a 2000-foot loss in altitude. The airplane spins faster to the right than to the left, but right-hand spins require less altitude to complete. In addition to the greater altitude loss in left-hand spins, the airplane has a tendency to pitch down steeper while rotating in this direction. Use of ailerons during spin recovery is not recommended. Use of ailerons against the spin increase buffet and slightly increase the pitch-down angles. The outstanding characteristic of using ailerons against the spin is that it slows recovery time by doubling the ordinary 3 seconds required to stop rotation. Ailerons with the spin do not delay recovery, but they may cause the airplane to spin slightly faster, with some increase in altitude loss. Speed brakes have no noticeable effect upon spin characteristics. Therefore, if the speed brakes are open when a spin is entered, complete the recovery with them open, if desired, being sure to hold forward stick to allow airspeed to build up above stall speed to about 135 knots IAS (gear and flaps up). Spinning with power on (from a 2 G turn with 80% rpm) is characterized by lesser pitch-down angles and by a 45-degree nose-down attitude after spin rotation has stopped, in contrast to 90-degree dive during power-off recovery. However, the advantage of having a much shallower angle with power on to complete recovery is offset by the fact that speed increases so rapidly that just as much or more altitude is lost in comparison to the 90-degree, power-off recovery completion. If you inadvertently spin with landing gear and flaps down, the airspeed during recovery will exceed placard limits. Retract the landing gear and wing flaps immediately on entering a spin to avoid structural damage. Spins in the landing configuration are characterized by slightly less altitude loss during the first turn. Spin entry from an accelerated turn with drop tanks installed is different from that with airplane in the clean configuration. With drop tanks installed, the airplane momentarily rolls into a spin in the direction opposite to the original turn. The airplane spins one or two turns in this direction and then sharply reverses itself and spins in the original direction (direction of accelerated turn). Recovery is accomplished as during a normal spin, by applying full opposite rudder and immediately neutralizing the stick. The only difference between spins with or without drop tanks installed is the initial spin entry, the first one or two turns with drop tanks installed being opposite to the original accelerated turn direction.

Warning

Spins with bombs, rockets, or 200-gallon drop tanks installed are prohibited.

F-86F-1-0-10

WARNING

If a spin is inadvertently entered when external loads are installed, use normal recovery procedure. If the spin does not stop within one and one-half turns, jettison external loads and repeat normal recovery procedure.

NONOSCILLATORY SPINS.

You may encounter a different kind of spin, a nonoscillatory type, in which the normal rise and fall of the nose of the airplane through each turn does not occur. Instead, the airplane will spin rapidly with a steady pitch angle. The nonoscillatory spin can be encountered on early airplanes which do not have the extended leading edge and is caused when the outboard or inboard ends of the slats stick closed while the other ends rack open. These spins usually require more turns for recovery after recovery controls are applied.

6-5

Extracts from the Pilot's Notes of Supermarine Attacker and the F-86F Dash One. The poor quality of documentation and instruction during the early period of RPAF became evident during the subsequent transition to American systems and is apparent from this illustration. On the left above is an extract from the Pilot's Notes of the Supermarine Attacker. Spinning is mentioned in two lines of section 75. On the right (above) and right is the same topic discussed in the equivalent documentation of the F-86F (T.O. 1F-86F-1). The same topic is presented in far greater detail. This "Dash One" has additional pages on the subject and discusses different types of spins, recommended recovery methods, loss of altitude, time for each spin turn, pitch attitude, etc. This illustrates well how a lack of quality documentation and instructional standards would have hamstrung the development of professional standards for aircrews. (Authors' collection)

APPENDIX

TAIL NUMBERS OF AIRCRAFT THAT SERVED WITH ROYAL PAKISTAN AIR FORCE AND PAKISTAN AIR FORCE

Aircraft Type	**Serial Numbers**	**Remarks**
Vickers Viscount	J-751	
Vickers Viking	J-750	
Douglas Dakota	H700, H701, H702, H703, H704, H705, H706, H707, H708, H709, H710, H711, H712, H713, H714, H715, H716, H717, H718, H179, KN603, KN324, KN437, VP907, KJ920, VP906, VP908, VP909, VP915, VP918, KJ220, KN 239, KN244, KN452, KN 603, KK177, KK260, C401, C404, C406	Hard facts regarding service of Dakota with RPAF are difficult to ascertain. These serial numbers have been collected from a variety of sources and the list is probably incomplete.
Hawker Tempest II	A-101, A-102, A-103, A-104, A-105, A-106, A-107, A-108, A-109, A-110, A-111, A-112, A-113, A-114, A-115, A-116, A-117, A-118, A-119, A-120, A-121, A-122, A-123, A-124, A-125, A-126, A-127, A-128, A-129, A-130, A-131, A-132, A-133, A-134, A-135, A-136, A-137, A-138, A-139, A-140, A-141, A-142, A-143, A-144, A-145, A-146, A-147, A-148, A-149, A-150, A-151, A-152, A-153, A-154, A-155, A-156, A-157, A-158, A-159, A-160, A-161, A-162, A-163, A-164, A-165, A-166, A-167, A-168, A-169, A-170, A-171, A-172, A-173, A-174, A-175, A-176, A-177, A-178, A-179, A-180, A-187	Tempest IIs were inherited on partition. Later on RPAF acquired further aircraft in two more batches.
Hawker Sea Fury FB.60/T.61 and T.20	L-900, L-901, L-902, L-903, L-904, L-905, L-906, L-907, L-908, L-909, L-910, L-911, L-912, L-913, L-914, L-915, L-916, L-917, L-918, L-919, L-920, L-921, L-922, L-923, L-924, L-925, L-926, L-927, L-928, L-929, L-930, L-931, L-932, L-933, L-934, L-935, L-936, L-937, L-938, L-939, L-940, L-941, L-942, L-943, L-944, L-945, L-946, L-947, L-948, L-949, L-950, L-951, L-952, L-953, L-954, L-955, L-956, L-957, L-958, L-959, L-960, L-961, L-962, L-963, L-964, L-965, L-966, L-967, L-968, L-969, L-970, L-971, L-972, L-973, L-974, L-975, L-976, L-977, L-978, L-979, L-980, L-981, L-982, L-983, L-984, L-985, L-986, L-987, L-988, L-989, L-990, L-991, K-850, K-851, K-852, K-853, K-854, K-857, K-858	L-900 – 974 were in desert scheme. L-975 onwards wore the green and grey scheme. A total of 92 single-seat aircraft were acquired. Additional airframes included six dual-seaters in total and the NX802 prototype (K857).
Handley Page Halifax	Q-1275 till 1280, M-1100	Serial numbers of Halifax aircraft operated by RPAF have been obtained from log books and photographs. Not all serial numbers could be sourced.
T-6G	T-4200, T-4201, T-4202, T-4203, T-4204, T-4205, T-4206, T-4207, T-4208, T-4209, T-4210, T-4211, T-4212, T-4213, T-4214, T-4215, T-4216, T-4217, T-4218, T-4219, T-4220, T-4221, T-4222, T-4223, T-4224, T-4225, T-4226, T-4227, T-4228, T-4229, T-4230, T-4231, T-4232, T-4233, T-4234, T-4235, T-4236, T-4237, T-4238, T-4239, T-4240, T-4241, T-4242, T-4243, T-4244, T-4245, T-4246, T-4247, T-4248	
Harvard II B & C	B-300, B-301, B-302, B-303, B-304, B-305, B-306, B-307, B-308, B-309, B-310, B-311, B-312, B-313, B-314, B-315, B-316, B-317, B-318, B-319, B-320, B-321, B-322, B-323, B-324, B-325, B-326, B-327, B-328, B-329, B-330, B-331, B-332, B-333, B-334, B-335, B-336, B-337, B-338, B-339, B-340, B-341, B-342, B-343, B-344, B-345, B-346, B-347, B-348, B-349, B-350, B-351, B-352, B-353, B-354, B-355, B-356, B-357, B-358, B-359, B-360, B-361, B-362, B-363, B-364, B-365, B-366, B-367, B-368, B-369, B-370, B-371, B-372, B-373, B-374, B-375, B-376, B-377, B-378, B-379, B-380, B-381, B-382, B-383, B-384, B-385, B-386, B-387, B-388, B-389, B-390, B-391, B-392, B-026, B-028, B-047, 121, 144, 188, 194, 235, 413, 449, 456, 457, 766, 839, 993	
Grumman SA-16B Albatross	17220, 17221, 17222, 17225	Converted to SA-16B and re-designated HU-16B in 1962.
Auster AIGLET	W4100, W4101, W4102, W4103, W4104, W4105, W4106, W4107, W4108, W4109, W4110, W4111, W4112, W4113, W4114, W4115, W4116	17 AUSTER AIGLET were delivered in total.

Aircraft Type	**Serial Numbers** (*continued*)	**Remarks**
Auster V	E106, E602, E604, E605, E606, E607, E609, E610, E611, E616, E617, E637, E642, E654, E655, E656, E662, E664	46 Auster V and VI were delivered.
L-19	011, 015, 905, 915, 992, 995, 997, 999	
Fox Moth	AP-ABN	
Supermarine Attacker	R4000 to R4035	The 36 aircraft carried consecutive serial numbers starting from R4000.
Bristol Freighter B170 Mk 21	G-775	
Bristol Freighter B170 Mk 21E	G-776	
Bristol Freighter B170 Mk 21P	G-777, G-778, G-779, G-780, G-781, G-782, G-783, G-784, G-785, G-786, G-787, G-788, G-789, G-790, G-791, G-792, G-793, G-794, G-795, G-796, G-797, G-798, G-799, G-800, G-801, G-802, G-803, G-804, G-805, G-806, G-807, G-808, G-809	
Bristol Freighter B170 Mk 31M	S4401, S4402, S4403, S4404, S4405, S4406, S4407, S4408, S4409, S4410, S4411, S4412, S4413, S4414, S4415, S4416, S4417, S4418, S4419, S4420, S4421, S4422, S4423, S4424, S4425, S4426, S4427, S4428, S4429, S4430, S4431, S4432, S4433, S4434, S4435, S4436, S4437, S4438	A few serials of Freighters acquired are missing
North American F-86F	51-13226, 51-13228, 51-13315, 51-13333, 51-13367, 51-13380, 51-13386, 51-13407, 51-13427, 51-13447, 52-4716, 52-4724, 52-4725, 52-4726, 52-4849, 52-5026, 52-5031, 52-5105, 52-5160, 52-5232, 52-5248, 52-5305, 52-5316, 52-5333, 52-5377, 52-5384, 52-5412, 52-5394, 53-1075, 53-1076, 53-1084, 53-1087, 53-1095, 53-1102, 53-1105, 53-1107, 53-1109, 53-1125, 53-1127, 53-1147, 53-1161, 53-1163, 53-1173, 53-1174, 53-1176, 53-1180, 53-1182, 53-1186, 53-1187, 53-1189, 53-1192, 53-1198, 53-1199, 53-1212, 53-1214, 53-1216, 53-1217, 55-3826, 55-3832, 55-3839, 55-3843, 55-3848, 55-3850, 55-3851, 55-3853, 55-3854, 55-3855, 55-3856, 55-3857, 55-3860, 55-3861, 55-3866, 55-3870, 55-4013, 55-4018, 55-4019, 55-4020, 55-4021, 55-4022, 55-4023, 55-4024, 55-4025, 55-4026, 55-4027, 55-4028, 55-4029, 55-4030, 55-4983, 55-4984, 55-4985, 55-4986, 55-4987, 55-4988, 55-4989, 55-4991, 55-4992, 55-4993, 55-4995, 55-4996, 55-4998, 55-5000, 55-5001, 55-5002, 55-5003, 55-5005, 55-5011, 55-5018, 55-5030, 55-5031	Only 109 serials have been confirmed from photos or pilot logbooks. 41 remain unknown. F-68Fs were in natural metal schemes and early pictures show at least some aircraft with squadron markings on the nose and chequers on nose and tail. These were later removed. Known chequer colours were, No. 14 Squadron black and white, No. 17 red and yellow, No. 15 red and white. For details, see the colour section of Volume 2.
Lockheed F-104A/B	56-802, 56-803, 56-804, 56-805, 56-807, 56-868, 56-874, 56-875, 56-877, 56-879, 56-773, 56-798, 57-1309, 57-1312	
Lockheed T-33	51-8577, 51-8592, 51-8755, 51-8835, 51-9285, 52-9660, 52-9668, 52-9669, 52-9688, 53-5113, 53-5127, 53-5195, 53-5259, 53-5364, 53-5365, 53-5366, 53-5367, 53-5368, 53-5369, 53-5517, 53-5533, 53-5551, 53-5906, 54-4035, 54-4036, 55-3109, 55-3110, 55-3111, 55-3112, 55-3113, 55-3114, 55-3115, 56-1601, 56-1620, 56-1621, 56-1622, 56-1746, 56-3113, 55-3115, 57-0697, 57-0698, 58-0451, 58-0453	
Lockheed RT-33	53-5090, 53-5491, 53-5517, 53-5533	
Lockheed B-57C	53-3846, 53-3948	
Lockheed B-57B	53-3885, 53-3891, 53-3934, 53-3938, 53-3939, 53-3941, 53-3942, 53-3943, 53-3945, 53-3946, 53-3947, 53-3949, 53-3950, 53-3951, 53-3952, 53-3954, 53-3955, 53-3956, 53-3957, 53-3958, 53-3959, 53-3960, 53-3961	53-3961 & 53-3934 were converted to RB-57B and transferred to No. 24 Squadron in 1962.
Canadair Sabre Mk 6 (called F-86E in PAF)	1592, 1594, 1595, 1606, 1607, 1608, 1614, 1616, 1617, 1618, 1621, 1622, 1623, 1624, 1626, 1627, 1629, 1632, 1634, 1636, 1639, 1650, 1652, 1653, 1653, 1655, 1656, 1657, 1658, 1660, 1661, 1663, 1665, 1669, 1670, 1674, 1683, 1689, 1692, 1693, 1695, 1701, 1702, 1703, 1705, 1709, 1718, 1719, 1720, 1722, 1728, 1733, 1735, 1738, 1739, 1742, 1747, 1749, 1751, 1754, 1756, 1763, 1764, 1765, 1766, 1771, 1772, 1777, 1778, 1781, 1783, 1786, 1787, 1788, 1789, 1790, 1792, 1794, 1797, 1798, 1800, 1802, 1803, 1804, 1808, 1809, 1810, 1811, 1812, 1815	

Aircraft Type	**Serial Numbers** (*continued*)	**Remarks**
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Dassault Mirage-IIIDP	301-303	
Dassault Mirage-IIIRP	201-203	

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Air Vice Marshal Khyber Khan, dated 7 October 1986
Air Vice Marshal A. Elahi Shaikh, dated 24 November 1986
Air Vice Marshal A. Qadir, dated 7 May 1986
Air Commodore T.S. Jan, dated 13 May 1986
Air Commodore B.K. Dass, dated 21 June 1986
Air Commodore P.D. Callaghan, dated 19 June 1986
Air Commodore M.M. Piracha, dated 22 April 1986
Air Commodore Maqbool Rab, dated 17 August 1986
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2 Singh, *Himalayan Eagles*, p. 20.

3 Singh, *Himalayan Eagles*, p. 22.

4 After the 1857 war of independence rule over India by the East India Company was abolished and India came under the direct control of the British crown and a Viceroy was appointed by the British government. The office also held the previous position of the Governor-General, as a result both positions were always held by the same person. After independence, till their declaration as republics, both India and Pakistan continued with the office of the Governor-General.

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Chapter 2

1 As a dominion under the British Commonwealth of Nations the British monarch was head of state, though delegated to a Pakistani governor-general. The capital was then Karachi. The arrangement also dictated the "Royal" in the name Royal Pakistan Air Force. This persisted until 1956 when Pakistan became a republic, though it remained within the Commonwealth. This association permitted Pakistan easier access to the resources of Great Britain per agreements negotiated at the time.

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5 Syed Shabbir Hussain, Squadron Leader Tariq Qureshi, *History of Pakistan Air Force 1947-1982* (PAF Press, Karachi, 1982), p. 24.

6 Singh, *Spitfires in the Sun*, p. 40.

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8 *Hawker Tempest*, 4+ Publications, p. 3.

9 *Hawker Tempest*, 4+ Publications, p. 3.

10 Rules allowed Muslims domiciled in areas that were to become India to opt for Pakistan, while Muslims domiciled in areas that were to be Pakistan had no option to elect and were to be part of RPAF. For non-Muslims domiciled in India, no choice between the two countries was possible, while non-Muslims living in areas that were becoming Pakistan could choose between India and Pakistan.

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15 Airmen is a term used to describe non-commissioned officers and men of various trades and branches in RPAF/PAF.

16 Interview with Air Commodore M.Z. Masud, 23 April 1986.

17 On independence RPAF and RIAF aircraft had three and seven squadrons allocated respectively. However, the number of aircraft with both services were considerably more than the standard 16 aircraft per squadron.

18 'First Graduation Parade at Risalpur and Subsequent Visit of Quaid-e-Azam', *A Lucky Pilot*, <https://www.concordiaexpeditions.com/luckypilot/4.html >, accessed 7 May 2021.

19 Pakistan has always had an all-volunteer military and never adopted conscription.

20 Article by Master Warrant Officer Mohammad Abbas Akhtar in *The Hilal* 1977.

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2 'The Temperamental Tempest', *Bharat-Rakshak.com*, < http://www.bharat-rakshak.com/IAF/aircraft/past/923-hawker-tempest-ii>, accessed 6 May 2021.

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4 Syed S. Hussain, *History of the PAF*, p. 24.

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6 4+ Publications, *Hawker Tempest*, p. 3.

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18 ‘HANDLEY PAGE HALIFAX HO-57/B-VI – Pakistan Air Force’, ‘Weapons and Warfare’, <https://weaponsandwarfare.com/2019/02/13/handley-page-halifax-ho-57-b-vi-pakistan-air-force>, accessed 9 July 2021.
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25 Air Commodore Mansoor Shah, interview with Air Commodore M.Z. Masud.
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